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MISSOURI BOTANICAL GARDEN

BULLETIN

63

1974-1975

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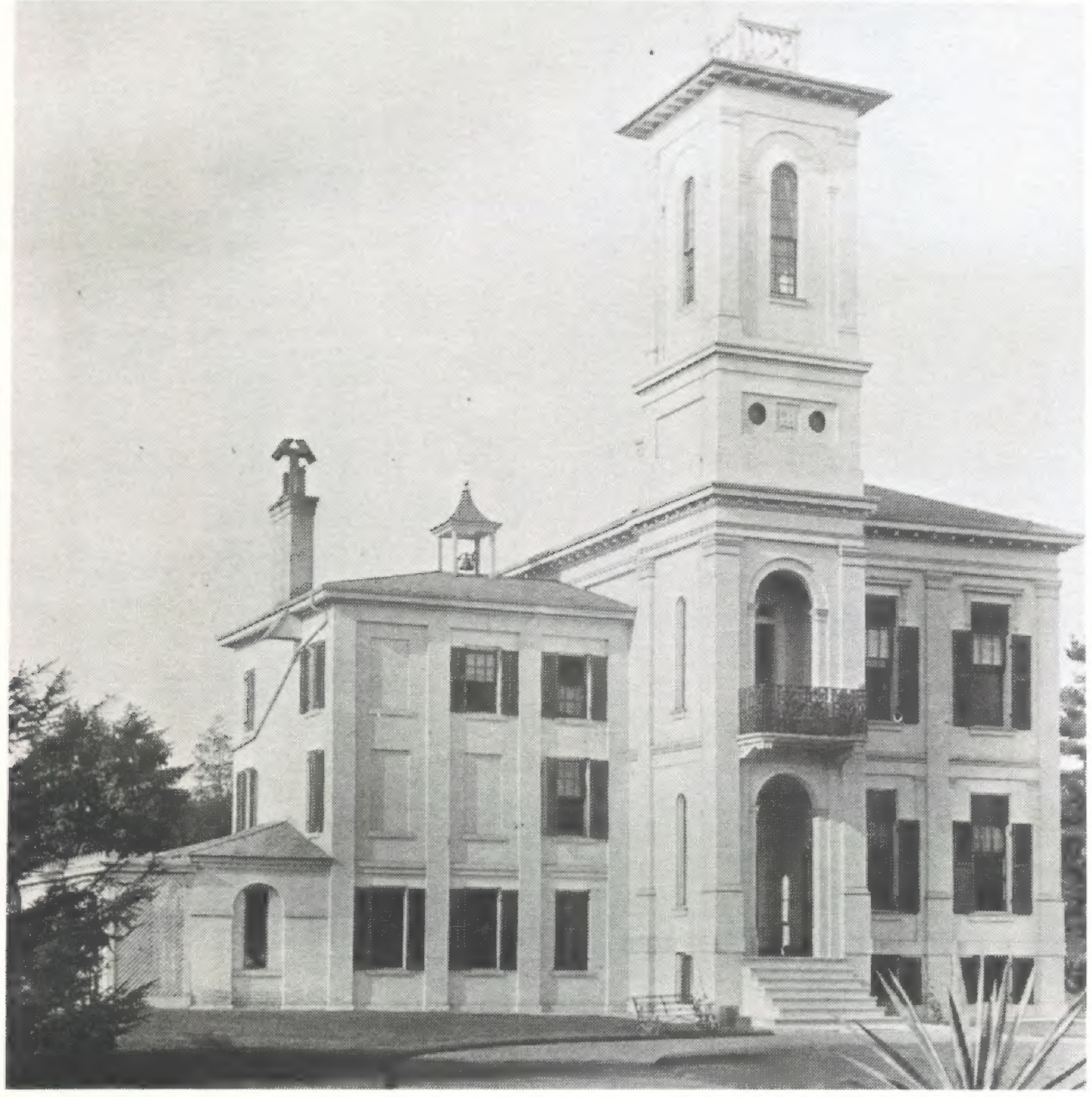
An Historical Landmark in a Botanical Garden



Tower Grove House — 1866

It is believed that from the time of his arrival in St. Louis in 1819 until the completion of his two homes some thirty years later, Henry Shaw lived, for the most part, above his shop at 7 North First Street. All those years of cramped bachelorhood in makeshift quarters must certainly have weighed in his decision in middle age to live in surroundings more appropriate to his financial circumstances. By 1839 he had gathered a fortune of $250,000 which he considered an adequate lifetime accumulation of wealth. In that year he retired from active business, set off on the first of three long voyages through Europe, and began to collect furnishings, books and art for the two houses he commissioned the St. Louis architectural firm of Peck and Barnett to design for him. The building of both houses was started in 1849 and completed shortly after his return from his last trip abroad in 1851.

The town house, at Seventh and Locust Streets, was the grander of the two (the architects received $350 for designing it and supervising its construction). A three story house, it contained 17 rooms, including two kitchens, and Shaw spared no expense in decorating it as befit his status as a wealthy Victorian. He bought tiles for the front hallway from Minton & Co., of Stoke on Trent, a variety of elaborate marble mantels from Leonard Sence of New York, a great deal of Brussels carpet, and, in England, 40 yards of silk (he wrote of it, "The colors are chocolate and gold — but most of the latter, in silk and worsted") for curtains. No one knows quite why Shaw built such a big house in town. According to Mrs. Rebecca Edom, his housekeeper, interviewed by *The Republic* in April 1891, " . . . he built it in order that his mother and sister, who were in Rochester, New York, would come to St. Louis, and it was a view to their comfort. When it was completed, the mother and sister were afraid to come as they are afraid of the climate."

Whatever the reason for its grandeur, the town house clearly took second place in Shaw's feelings for his two homes. It was Tower Grove that he loved, it was in that house that he spent most of his last 30 years, winter and summer, and it was in his bedroom there that he died in 1889. Shaw's writings tell us that he first saw the site of his future country estate the year he arrived in St. Louis. "When I first visited these grounds, Tower Grove, I was in my nineteenth year. From the Village of St. Louis I came through the bushes, by a narrow path winding among the sink holes . . . to the elevated ground now called Grand Avenue, where, open to the river, a beautiful prairie extended westward, uncultivated, without trees or fences, but covered with tall luxuriant prairie grass . . . On the small water course, running to Rock Spring and then to the millpond of Mons. August Chouteau . . . were growing the Nymphaea, or water lily. I also observed on a gently rising ground a clump of hazel bushes; thirty years later the hazel bushes had disappeared, and in their place had grown up a

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grove of oaks, and sassafras laurels; in 1849 this house and tower were erected, and it became Tower Grove." This unembellished yet lyrical prose reminiscence written in Shaw's 79th year beautifully expresses the affection he felt for the house and its site.

The tower and west wing were exactly as they are today (except that the brick exterior was sandblasted and covered with stucco in 1918), but the original east wing was a small servants' quarters with three low-ceilinged stories. The lumber, hardware and carpenter work on Tower Grove House cost Mr. Shaw $3,660. The figure charged by Peck and Barnett for its design has been lost. There was no central heating or running water in the building. The extremely high ceilings in the main part of the house, high even in a day when high ceilings were the rule, were designed to keep the house, intended as a summer residence, as cool as possible. From Thomas Dimmock, Shaw's official biographer, we learn that Shaw's favorite room on the second floor "was always plainly furnished, containing only a brass bedstead, tables, chairs and the few books he loved to have near him. The windows looked out upon the old garden which was the first botanical beginning at Tower Grove." Here he died a quiet, painless death, brought on by the complications of malaria, early on Sunday morning, August 25, 1889.

Following Mr. Shaw's death, the probating of his will required an inventory and appraisal of the furnishings in both of his homes. This inventory, undertaken by O. W. Rodeman, D. N. Burgoyne and Alex Selkirk, notes the individual items and gives the value of each. It is a fascinating document to read. For instance, found in the tower itself was (among other things) "1 large United States flag – $2.50; 1 lot of soap – $5.00; 1 6 foot step ladder – $1.00." Whatever that combination might have accomplished remains a mystery. In Shaw's bedroom was found "1 brass bedstead & bedding – $75.00; 1 telescope – $25.00; 1 rosewood secretary & contents – $20.00; 1 lot of loose books and pamphlets – $10.00; 1 decorated toilet set – $5.00." Here there is no mystery; only personal articles which describe a man whose eagerness for knowledge was not diminished by his great age.

Dr. William Trelease succeeded Henry Shaw as director of the Missouri Botanical Garden. Dr. Trelease had a large family and needed more space than the original house provided. He reported to the Trustees that the east wing, which had been temporarily built, was "unsanitary" and thus it was replaced in 1890 by a new wing, designed to match the west wing more closely, at a cost of $19,000. A water supply, including the necessary piping along Tower Grove Avenue, supplemented by a provisional sewerage system, necessitated the further expenditure of $4,589.10. Even by today's standards, the rate of inflation at the turn of the century was significant!

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Lorine H. Compton, Editor

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The Restoration of Tower Grove House

Dr. Trelease and his family continued to live in the House until he left the Garden. Dr. George Moore had come to St. Louis in 1908 to work at the Garden. Until early 1912 he and his family lived in a second floor flat on Cleveland Avenue. He became Director of the Garden in 1912 and lived in Tower Grove House during 1912 and 1913 while a new residence was being built at the corner of Tower Grove Avenue and Magnolia Avenue.

After 1913 the Tower Grove House was used for staff offices, classrooms for the Gardening School, research space, and housing for students. In the spring of 1953, funds given by Mr. Joseph Desloge were used to clean up and begin restoration of the House and the Museum. Advice and help was given by members of the William Clark Society, a group of St. Louis area men interested in regional history. Two of its members, Guy Study and John Bryan, well-known architects, surveyed the home and made recommendations for its restoration and for structural repairs essential for safety of visitors. A non-profit corporation, the Henry Shaw Memorial Association, was formed to help with publicity and raising funds.

As much of the furniture and materials pertaining to Henry Shaw as could be located were moved into the House. Mrs. Arthur Krueger and Mrs. George Pring arranged to have various clubs of the Missouri Federation of Women's Clubs act as volunteer host-

esses and with this the House was opened to visitors in the summer of 1953. No admission was charged during these early years while restoration was underway but a glass bowl was kept on the hall table for donations.

On October 10, 1953 the Veiled Prophet's Queen and her maids held a reception for St. Louis school children at the House. It was decorated with plants and flowers and the publicity and enthusiastic responses encouraged further restoration work. A large gift from Stix, Baer and Fuller, made possible by Mr. J. Arthur Baer, paid for extensive repairs to wiring, plumbing, woodwork, and walls, and the repair of some of Henry Shaw's furniture. The work was supervised by John Bryan who, through his work on the Old Court House, was able to locate craftsmen skilled in restoration work or careful and tolerant enough to work on antique plumbing, wiring, and woodwork. The rehabilitation of the House was well in hand by 1954.

About this time a committee was organized to promote the restoration work and to help raise funds for it. This eventually became the Historical Committee, which now consists of a Chairman (Mrs. Charles S. Lamy) and eight members (Mrs. Neal S. Wood, Mrs. Jerome F. Kircher, Mrs. John S. Lehmann, Mrs. Roland Jester, Mr. George Brooks, Mrs. William Bowman, Miss Elizabeth N. Young and Mrs. C. C. Johnson Spink).

The furnishings in the house are restricted to the years between 1849, when it was built, and 1890, the year following Shaw's death. They have been able to track down and bring back to the house more of Mr. Shaw's own pieces. Some of the furnishings, all of them originals (as reproductions do not belong in buildings which are true historic restorations) have come to the house from various donors, many of them St. Louisans who have had to break up large estates.

Tower Grove House Today

Tower Grove House is open to the public seven days a week the year round. Guided tours are given to all visitors by volunteer guides assisting nine paid hostesses who work on a rotating basis and who are overseen by an administrator. The hostesses and guides, trained by the Committee in the history of the house and its furnishings, take visitors through each room of the house pointing out items of special interest and detailing the significance of Henry Shaw's life as it relates to the Missouri Botanical Garden and to St. Louis history.

Visitors are met in the library just to the left of the entrance hall and opening onto the large formal dining room. The dining room furniture is of an early English Victorian style and most of it – the table and chairs, sideboard, tea service, mantel garniture and the curious plate warmer by the hearth – came from Shaw's town house. Following the entrance hall towards the back of the house, one passes an unusual oil painting of the Madonna and Child surrounded by flowers. The painting, commissioned by Shaw on his last trip abroad, is a copy of a painting in the style of the Flemish realists. The flowers, we are told, were not a feature of the original but an addition requested by Mr. Shaw. All are springtime varieties, none of them later than the early part of the rose season.

The kitchen, located at the back of the east wing, is, according to hostesses, the most popular room in the house. It is a particularly cozy place with its big, black coal range which served both as a cook stove and a source of heat. Not far from the stove is a kitchen table set out with rolling pin and fancy cookie cutters of the period. There is a sink with a pump for inside water. White enamel containers marked "soda," "sand" and "seife" (soap) held the polishing materials for the carbon steel knives which had to be cleaned after each use. There are apple corers and peelers, a double cherry pitter, ruffling irons for the upkeep of Victorian jabots, a butter churn, and an enormous blue agate coffee pot. The floblue china was made by one of the Staffordshire potters about 1860 and, while it is today greatly sought after, it was commonplace kitchen ware in the 1860's and '70's. The Ansonia clock on the shelf was Mr. Shaw's own.

Perhaps the most inviting room is the one at the back of the house at the end of the entry hall – Mr. Shaw's office. Facing south, it is bright and sunny and offers a fine view of the herb garden and the south portion of the grounds. All the furniture in this room belonged to Shaw: the painted ladder back arm chair, the secretary of Hungarian ash and the strange, studded, cast-iron safe. The key to the safe has long been lost and it remains locked, guarding whatever secrets it may still hold. There is a legend that the safe could also be opened by simultaneous pressing of two or more specific studs, but to this day no one has proven this the case (and it would seem likely that

there have been some who have tried!).

Stretching nearly the length of the west wing is the double parlor, both rooms of which have been furnished in good quality Victorian pieces, but still not the most elegant – exactly what one would expect to find in a country home. The piano, made by Allson of London, belonged to Shaw as did the Waterford crystal chandeliers and the gilt mirrors. The almost cluttered effect in these rooms was considered highly desirable to Victorians who abhorred the thought of open indoor space.

Of special interest in the front parlor is the large portrait of the three children of Isaac W. and Mary Clementine (Stacker) Taylor. The youngest of the children was Isaac Stockton Taylor who grew up to become the chief architect for the Louisiana Exposition of 1904. The portrait is signed by Manuel de Franca, a Portuguese-born artist who had a large patronage among wealthy St. Louisans around the middle of the 19th century. Against the opposite wall is a grandfather's clock which is said to be the single most important item in the house. The clock, which once belonged to Henry Hitchcock, was made, by Williams, in Newport, Rhode Island in 1790. It is in perfect working order.

Upstairs, the west wing holds Henry Shaw's bedroom, the guest bedroom and the upstairs sitting room. In Shaw's own room, the brass bedstead, lost sometime after his death, has been replaced by another of his beds, a high poster in the Victorian gothic style. Here also are his reading stand and a walking stick inscribed "Henry Shaw – St. Louis." The rest of the furniture, carefully chosen as examples of a less pretentious Victorian type, is in rosewood and marble.

The guest bedroom has been decorated and furnished to please a lady for it was this room Shaw's sisters used when they visited him. The bed, with its cantilevered canopy, is massive but perfectly balanced by the soaring ceilings which are even higher on the second floor. Near the foot of the bed is what was known as a "Modesty Bootjack," an ingenious device with a hinged panel that concealed a lady's ankle while she removed her boot.

The upstairs sitting room is dark, almost somber as if intended as the place for serious, private discussions. It contains several of Shaw's personal pieces including a mahogany desk-chest and a very large map case.

In the east wing is a second spare bedroom which houses an extremely unusual set of furniture made of curly birch with walnut ornamentation. The two chests of this set have marble tops which have been painted to match the color and grain of the birch (or "feathered," the term for this now almost extinct art). Whether the feathering was by design of the furniture maker, Alexander Roux of New York, or was a measure taken later to hide damage to the marble surfaces is unknown. The set, the only known complete one of its kind, was purchased as a wedding present in 1860 for the second wife of Derrick A. January, a prominent St. Louis merchant and a likely acquaintance of Shaw's. The huge, heavy pieces were shipped by sea to New Orleans and then brought by steamboat to St. Louis. This room contains a framed wreath of flowers, leaves and nuts which are fashioned of human hair. The incredible skill and patience this Victorian "lady's craft" required are all the more remarkable here for this wreath was the work of an eleven year old girl.

And finally there is Dr. Trelease's bathroom. Surely he must have taken pride in the installation of the copper-lined built-in tub, the water-closet with its high flush box and chain and the small, cast iron, kerosene burning heater.

At this writing, the Committee is at work preparing to open a second east wing bedroom to the public. This one, to be called the Garneau Room, is being restored and furnished through the generosity of three Garneau descendents, Mrs. Garneau Weld, Mrs. William Weld and Mrs. Joseph Weld, who have selected as gifts to Tower Grove House Garneau portraits and furniture from the Weld House in St. Louis. The room will be ready for display this spring.

No tourist's visit to the Missouri Botanical Garden is complete without a tour of Henry Shaw's beloved house. Through the devotion of the people who have so meticulously restored it, the house allows us to sense for a moment the steadfastness and tranquility of Victorian life, a style of living which made it possible for men like Henry Shaw to fulfill their dreams. As the benefactors of his dream it is fitting that we visit his house. And for that privilege, we are greatly indebted to the Historical Building Committee. □

HENRY HITCHCOCK BECOMES HONORARY TRUSTEE

At the meeting of the Board of Trustees of the Missouri Botanical Garden on December 19, 1973, Henry Hitchcock was unanimously elected an Honorary Trustee. Mr. Hitchcock has served the Garden as Trustee for more than 26 years, from March, 1947, until his resignation in November, 1973. His resignation in no way reflects a diminished interest in the Garden; he and his wife, the former Eleanor Hoblitzelle, plan to be away from St. Louis at their home in Tucson, Arizona, and in Cotuit, Massachusetts, for much of the year.

There has always been a Hitchcock on the Board of Trustees of the Garden since it began operations in 1889 in accordance with Henry Shaw's will. Henry Hitchcock, grandfather of the present board member, was on the original board and served as vice-president from its first meeting until his death in March, 1902. Also named to the original board by Mr. Shaw and serving for a few months in 1889 was the present board member's great uncle, M. Dwight Collier. Mr. Hitchcock and Mr. Collier were friends of Henry Shaw and named as Trustees in his will.

The original Henry Hitchcock's son, George Collier Hitchcock, known to many St. Louisans as "The Judge," was elected to the board in November, 1903. Judge Hitchcock served the Garden for more than 43 years until his resignation in January, 1947, and was president of the Board from 1928 to 1947.

Henry Hitchcock, the current Board member, was born in Milton, Massachusetts, in 1906. He was married in 1932, and joined the Mississippi Valley Trust Company in 1942. Following the merger of the company with Mercantile Trust Company in 1951, Mr. Hitchcock retired as vice-president on June 30, 1952. He had been elected to the Board of Trustees of the Garden in 1947, and served as President from May, 1963, to December, 1966.

These three years were critical ones for the Garden, and following the resignation of Frits Went as Director in October, 1963, Mr. Hitchcock virtually assumed the role of acting director, carrying out these duties with diligence and devotion until the arrival of David M. Gates, the new Director, in September, 1965. Henry Hitchcock was especially active during this period in drawing attention to and gaining public support for the Garden's world-famous library, and these efforts helped materially in laying the groundwork for the 1969 Capital Fund drive which ultimately led to the construction of the Lehmann Building.

All of those connected with Shaw's Garden would want to take this opportunity to wish the very best to the Hitchcocks, and to hope that Mr. Hitchcock, in his new role as Honorary Trustee, will continue to attend Board meetings whenever possible and to give us the benefit of his advice. In doing so, he will be continuing a Hitchcock family tradition of more than 80 years duration, an outstanding example of how St. Louisans have consistently supported their Garden, the oldest in the United States, during its 115 years of existence. □

ELECTION OF OFFICERS OF BOARD OF TRUSTEES

At the annual meeting of the Board of Trustees of the Missouri Botanical Garden held on January 16, 1974, officers for the coming year were elected.

Joseph H. Bascom was re-elected president. Joining the board in 1971, he served as second vice president in 1972, and as president in 1973.

Mr. Bascom is chairman of the board of Broderick and Bascom Rope Company. He is also a member of the boards of directors of General Steel industries, St. Louis Union Trust Company, Mississippi River corporation, and the Missouri Historical Society.

Tom K. Smith, Jr., vice-president, Monsanto Company, was re-elected first vice president. He first became a member of the board in 1963, and serves on the board of the Arts and Education Council, Loretto Hilton Theater, and the St. Louis Symphony Society.

A. Timon Primm, III, was elected second vice president. Mr. Primm is vice president and general manager of the St. Louis Post-Dispatch.

Charles Orner, Controller of the Missouri Botanical Garden, was elected secretary of the Board of Trustees. □

Missouri Botanical Garden
is a fund member of

The Arts and
Education Council of
Greater St. Louis

Gardening in St. Louis

GARDENING FOR FEBRUARY

House plants need extra attention now. Be sure air is moist, give plenty of light, water as needed and wash frequently to remove dust, lice and scale. Give plants regular feedings of liquid fertilizer at two week intervals for now.

Keep cacti and succulent plants in the house in a bright, sunny window. Poor drainage in the pots and overwatering may encourage disease.

Chickweed control is best started in the month of February or early March, provided there is no snow on the ground and temperatures are above freezing. Chickweed starts to grow when temperatures are just above freezing and flower almost immediately, so usually seed is set by early March and those who delay control until April or early May will find control measures very ineffective. Pre-emerge can be used in February and should be one recommended for chickweed control. Care should be used in applying it just to the chickweed and keeping it away from other plants. If properly applied at this time, the second application should be carried out in late March, when new seedlings have germinated and have not started to flower.

Many problems have arisen due to the severe snow and ice storms encountered in late December and January. If evergreens have been broken down, care should be taken in removing all broken parts. If branches are just bent over, these can be straightened by staking them and tying to either a stake or the main stalk. Material used for tying should be a soft, pliable material that will not bite into the plant, and an ideal material for this purpose is nylon stockings. Where wire is used, a protective cushion such as strips of innertubes should be placed between the wire and the branch so that the wire cannot cut into the tree. Pyramidal evergreens, such as boxwood and yews, etc., may need to be tied into the natural shape and ties left for the coming growing season.

If heavy amounts of salt have been used on walks, care should be taken to see that this is leached from nearby plants by repeated, heavy applications of water. This should be done as soon as possible, before the salt has a chance to burn the plant roots. Do not be concerned about ground already being overly wet, as it is more important to get rid of the excess salt.

Spring bulbs will be showing above the ground from now on. It is not necessary to apply extra mulch or to cover these up with additional soil should cold weather be encountered. Growth will automatically stop when temperature gets down to 36 to 38° and plants will not suffer from severe cold. If ice storms should occur from now on after growth has commenced, damage from frost can be prevented by going out early in the morning and hosing the plants down to remove any ice. This, of course, should be done when the temperature is above freezing and before the sun has a chance to hit the plants.

This is your last chance to get garden tools cleaned and repaired for use next month. Avoid the last-minute rush.

Visit the Garden regularly for ideas and plan to attend the March 8th and 9th workshop for ideas to improve your own home garden this spring. □

ORCHID FANTASIA

The 1974 Orchid Show opens February 2 in the Climatron. You are invited to visit and to let your fancy roam freely as you walk surrounded – above your head and at your feet – by representatives of the orchid family.

For those who want just to look, who favor caprice over reason, the Fantasia has concentrated areas of colorful display to wonder at. In the banyan tree is the most showy of the displays, but look up for others scattered throughout the Climatron. The large orchids are hung in osmunda-covered baskets to give the illusion of the epiphytic or aerial plants in a tropical rain forest. For a change of pace, and to enjoy the botanicals, the tiny orchid gems, some of which are almost microscopic, linger at the display cases. The Italian fountain on the patio is the main "designed" display which can be imagined to be the tiers in a forest area: orchids in the soil on the ground level, orchids on a middle level upon boulders and fallen trees, and finally in the higher reaches in the trees.

For orchid fanciers and those who want to know, each tree containing orchids represents only one variety and each is well labeled. There is a strict adherence to the two growing habits of the plants, those which are terrestial and those which are "air plants," i.e. plants which grow on tree limbs and rocks and whose roots may be completely exposed to the air. An orchid hybridizing display presents the specie orchid and alongside, the cross or hybrids, thus showing the heritage of the latter. A map of the world gives a graphic picture of where orchids are found today, in moist climates as far north as Greenland, but more abundant in the tropics.

The orchids used in the Orchid Fantasia were grown in the greenhouses on the premises by Marion Pfeiffer and her staff. The Orchid Fantasia was designed and executed by Lyn Bayer and members of the Climatron and Garden staff. For details of the development of the Missouri Botanical orchid collection, refer to the informative article in the February, 1973 *Missouri Botanical Garden Bulletin.* □

GIFT TO LIBRARY

A generous gift from Mrs. George D. Stout, St. Louis, in memory of her husband has enabled the library to acquire several important publications.

Mr. Stout, Professor of English, was on the staff of Washington University from 1924 until 1964. For several years he did volunteer work in the membership office of the Garden.

Among the purchases made possible through Mrs. Stout's gift is a reprint of Mark Catesby's *Natural History of Carolina, Florida and the Bahamas,* one of the 18th Century's most important studies of American natural history. The original folio edition of this publication is particularly important for the high caliber of its hand-colored illustrations.

Another important set acquired is the 38 volume catalog of books and manuscripts of the American Philosophical Society Library, Philadelphia. This set provides scholars with bibliographic information to the Society's collection of 135,000 volumes on natural history, botany and other scientific subjects, and over two million manuscripts, including those of Benjamin Franklin and Charles Darwin.

Also included in purchase made through Mrs. Stout's generosity are the U.S. Geological Survey's new *National Atlas of the United States;* a complete set of the scientific journal *Systematic Zoology,* and T. M. Prentice's beautifully illustrated volume *Weeds and Wildflowers.*

All of these volumes are significant additions to our library, and we gratefully acknowledge Mrs. Stout's generosity in providing us the funds to make these purchases possible. □

ZOO GARDEN LECTURE SERIES

The Saint Louis Zoo and the Missouri Botanical Garden are sponsoring jointly a series of free lectures on the interrelationships between plants and animals native to major areas in the world.

The lectures will be dramatized with live specimens from each institution and began January 22nd in the Lehmann Building, Missouri Botanical Garden.

This is the first time a joint program covering plants and animals has been attempted locally or nationally.

Additional lectures are as follows: February 19th, "Plants and Animals of the South American Rainforests," at the Saint Louis Zoo – Education Classroom (entrance in rear of Primate House).

March 19th, "Plants and Animals of the North American Desert," at the Garden.

April 16th, "Plants and Animals of the Arctic and Alpine Tundra," at the Zoo.

May 21st, "Plants and Animals of Australia," at the Garden.

A brochure on the program can be obtained by calling Missouri Botanical Garden at 314-865-0440. □

Children of the Members at the annual Christmas Party. The 1973 party, sponsored by Kerr-Oberbeck, had a circus theme. The children here are watching one of the circus performers.

CLARENCE BARBRE MEMORIAL CONIFER COLLECTION

Generous contributions to the Missouri Botanical Garden have made it possible to establish a collection of conifers in Mr. Barbre's memory at the Missouri Botanical Garden. These trees will be planted around the lake and down the whole western side of the Garden, and they will help to continue the joy and pleasure that Mr. Barbre knew in bringing new kinds of plants to the attention of the people of the St. Louis area. His consuming interest was in plant propagation, and in the testing of new varieties suitable for our climate, and the Garden will work to extend these efforts. Nearly all the conifers in the Garden were killed by air pollution resulting from the burning of soft coal in the 1920's and 1930's and relatively few have been replaced since.

It was through the efforts of Clarence Barbre that one now sees azaleas in the gardens of the St. Louis area where they were virtually unknown twenty years ago. Before he would agree to sell azaleas to anyone, they would have to agree to follow his explicit instructions for their culture. His system worked and failures were few. People soon learned that azaleas, rhododendrons, and hollies could be successfully grown in the rigorous climate of St. Louis, an achievement which gave him much personal gratification. For many years he assisted in teaching classes in plant propagation at the Missouri Botanical Garden.

Mr. Barbre's boundless enthusiasm, his great good humor and intelligence and ability to educate people will be greatly missed by all who knew him. The plantings of new conifers at the Garden in his honor will be made in the spring. Contributions to the "Clarence Barbre Memorial Fund" may be sent to the Missouri Botanical Garden. □

NEW LIFE MEMBERS

Mr. Arthur M. Branch, Jr.
Mr. & Mrs. Whitney R. Harris

NEW SUSTAINING MEMBER

Dr. & Mrs. Fred Fabric

NEW FAMILY MEMBERS

Mr. & Mrs. John P. Baird
Mr. & Mrs. Arthur E. Ball, Jr.
Mr. & Mrs. Francis Basler
Mrs. June Bellinger
Wesley & Rebecca Berg
Dr. & Mrs. Jack L. Bishop, Jr.
Dr. Gordon Bloomberg
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Mr. & Mrs. William G. McCollom
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Mrs. Sue VanMatre
Mr. & Mrs. William R. Vickroy
Mr. & Mrs. Ronald C. Volak
Dr. Donald Webb
Mayor & Mrs. Raymond S. Zielinski
Mr. & Mrs. Robert G. Zwart

NEW INDIVIDUAL MEMBERS

Ms. Nancy V. Beck
Mrs. William C. Bitting
Mr. James L. Brainard
Mr. Lee Carter
Mrs. John Concren
Mollie Conrades
Karen Darsie
Dr. Harry Desroches
Margaret Dockery
Miss Dorothy Fager
Leonard H. Fischel
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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
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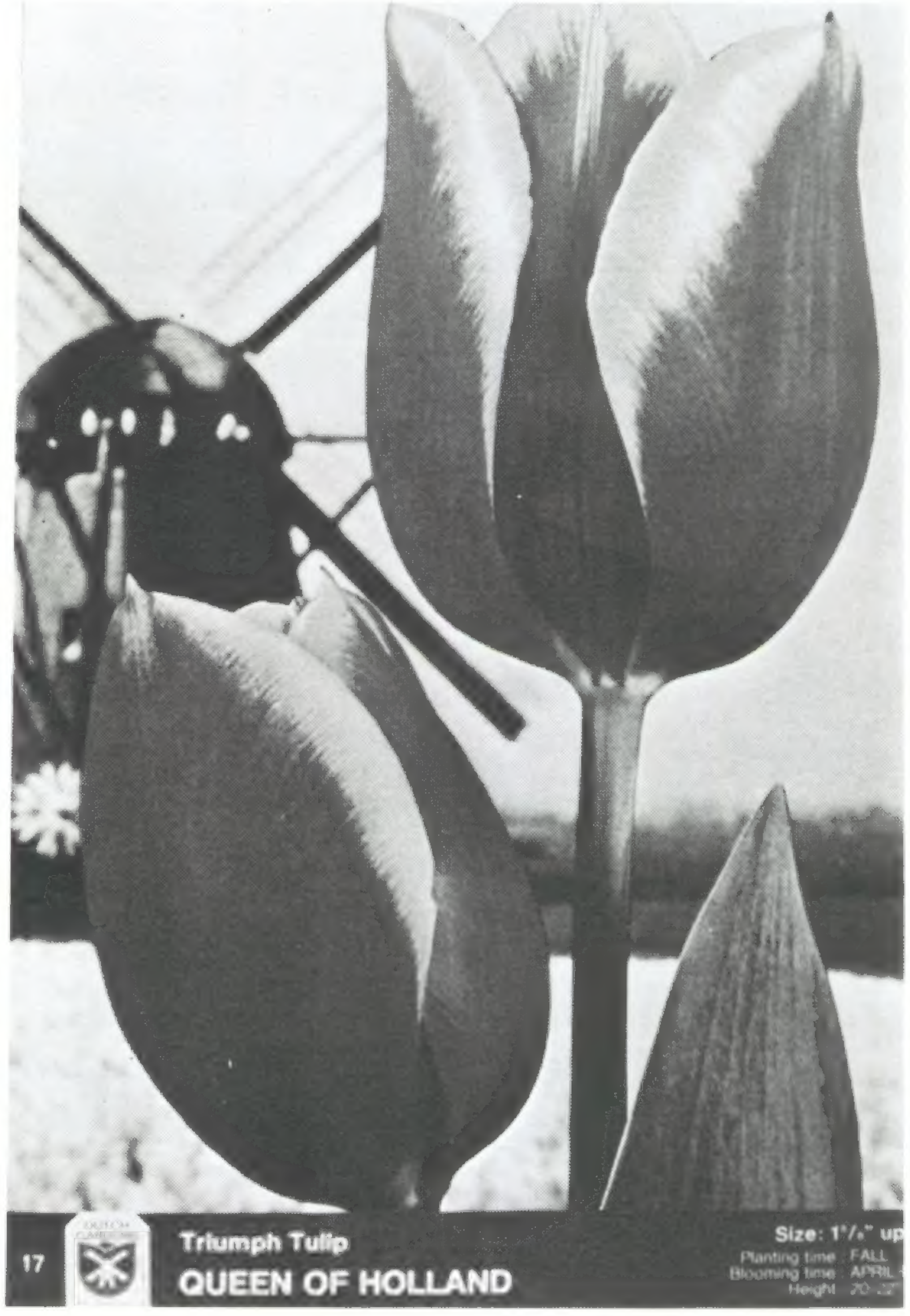
Missouri Botanical Garden Bulletin

A e B 73

LARGEST DISPLAY OF SPRING BULBS EVER AT THE GARDEN



From mid March through early May, the Missouri Botanical Garden will be the flower lover's paradise — and the photographer's as well — offering the chance to see spring blossoming at its peak. To show the infinite variety and beauty of the spring bulb, over 65,000 of them have been planted throughout the Garden grounds in both formal and informal settings.

The tulip is beloved for its air of formal majesty. To display this feature at its most magnificent, 5,000 "Darwin Hybrids" have been set out in the beds which line the walk from the Main Gate to the Climatron. The Darwin Hybrid has an especially sturdy stalk, from 18 to 24 inches in height, and an open blossom, an astonishing 6 inches in diameter. Its colors range from shades of yellow and orange to deep reds. 500 more tulips will fill a triangular bed in front of the Lehmann Building (some 2,000 jonquils will surround the building itself), and 7 to 8,000 more, mostly of the early flowering, botanical variety, typical of Mediterranean regions, are planted in the beds near the entrance to the Mediterranean House.

33,000 bulbs — daffodils, narcissus, hyacinths, and more tulips — will bloom less formally on the lawns of the Garden knolls and among the shrubs. 2,000 others have been planted in the perennial garden. In all, there will be in blossom in Shaw's Garden some 60 different varieties of narcissus and jonquils, 60 named varieties of tulips, and 12 other assorted bulb species.

Of all the seasons, springtime is almost everybody's favorite. It is a time both nostalgic and rejuvenating — full of promise. The Missouri Botanical Garden is a most appropriate setting in which to enjoy all that the softness and beauty of the season offer. We welcome you to its special celebration of spring. □

Volume LXIII Number 2

March, 1974

MEMBERS LECTURE SERIES

Winter – Spring

English Gardens, the January subject in the series of lectures for the Members of the Garden, was presented to a capacity audience in the auditorium of the Lehmann Building, the evening of January 30 by John Elsley.

The talk, illustrated with magnificent slides, covered the development of English Gardens from the early continental influence shown in the formal styles of the late 15th century through the informal English landscape school of the 18th century and finally covering the pertinent styles of today.

Many of the gardens described in this lecture are to be visited on the Members Spring Journey to Southern England in May. It is planned to repeat the lecture on English gardens later in the spring.

In February, Dr. Harriet Creighton of Wellesley College, presented *Phyllomania – What? Where? When? and So What?*

The lecture for March, given by the Director of the Garden, Dr. Peter H. Raven, is to be *Botany of the Southern Hemisphere,* and in April Dr. Charles B. Heiser, Jr., will talk on *Gourds Around the World.*

ENGLISH GARDENS TOUR, 1974

Plans for the tour by members of the Missouri Botanical Garden to selected gardens in southern England from May 17th to May 26th 1974 continue to make progress. The party will be staying at the Cumberland Hotel, a first-class hotel centrally located for our needs in London and our proposed excursions.

We have been extremely fortunate to obtain the services of Mr. Frank Knight, F.L.S., V.M.H., who will assist me in conducting our party around the different gardens. Mr. Knight is one of Britain's leading horticulturists and, until his retirement five years ago, was for many years Director of the world renowned gardens of the Royal Horticultural Society at Wisley in the county of Surrey. He is internationally recognized as a leading authority on trees and shrubs and is in constant demand as a lecturer, writer and broadcaster on horticultural subjects in general. Mr. Knight has travelled extensively in pursuit of his horticultural interests and his past visits to America, do, I know, rank among his career highlights. In addition, we hope to utilize the assistance of local experts at the various gardens visited.

The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

Lorine H. Compton, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

We aim to give members the opportunity to visit a garden on each day. Gardens included on the itinerary are those of Sissinghurst Castle in Kent, one of the loveliest gardens in southern England and created by the late Victoria Sackville – West and her husband Sir Harold Nicolson, around the surviving buildings of a beautiful Tudor and Elizabethan manor house. At the Royal Botanic Gardens Kew, we shall be visiting the world's greatest living botanical collection, while during our trip to the Royal Horticultural Society's Gardens at Wisley, we shall see an extension range of hardy plant material aesthetically utilized to produce one of the world's most respected horticultural establishments. The Savill Garden, situated in the royal property of Windsor Great Park, contains a magnificent 35-acre woodland garden displaying, throughout the year, plants of both horticultural and botanical interest.

A visit to the National Trust gardens at Stourhead in Wiltshire will enable us to enjoy one of the most beautiful landscaped gardens in existence with its extensive lakes and classical temples. Included in this excursion will be a visit to the prehistoric remains at Stonehenge and Salisbury Cathedral, a gem of early English gothic architecture.

Each participant will become a Fellow of the Royal Horticultural Society, and, in addition to other useful benefits, will be visiting on Private View Day the world's most famous flower show held annually in the glorious setting of the Royal Hospital, Chelsea. I am reliably informed that this year's Chelsea Show promises to be one of the most spectacular in recent years.

Two unique "dinner evenings," one at the Hampton Court and the other at the headquarters of the Zoological Society of London in Regents Park have been arranged. Members will of course be able, if they so desire, to avail themselves of the many diverse offerings available to the London visitor.

This promises to be a fascinating visit and I know you'll be thrilled with much you see. Everyone is most welcome! □

–John Elsley

John Elsley, Curator of Hardy Plants at the Garden, and formerly botanist for the Royal Horticultural Society, will conduct the Missouri Botanical Garden Spring Journey to southern England. Fee is $775, plus $75 tax deductible contribution to the Garden. The fee includes round trip air transportation on TWA from St. Louis, hotel accommodations, entrance fees to the gardens, and meals as designated. For complete details please telephone or write the Membership Office of the Garden.

THE GARDEN GOES ON ROMPER ROOM

The Missouri Botanical Garden recently presented KTVI's "Miss Lois" of Romper Room an attractive Indian rubber tree plant. The children care for the plant daily and are presently involved in a contest to name it. Each Thursday, Nancy Kreutz, "Miss Nancy", appears on the program to inspect the plant and encourage the children to keep up the good work. She also presents a "plant of the week" and provides educational information. The national office of Romper Room, Inc., Baltimore, has commissioned the Garden to prepare a five minute slide film which will be featured on Romper Room nationally. Dr. John Dixon, Chairman of the Education Department, is working on the project.

ROMPER ROOM

The Garden's director of Public Relations, Al Toroian, (L) and Dr. John Dixon, chairman of the Education Department, surprise Romper Room with a special gift. Nancy Kreutz, "Miss Nancy", (center) of the Garden's Education Department, and Miss Lois, Romper Room's hostess, accept the plant in behalf of the children.

MARCH HORTICULTURAL WORKSHOP
Vegetable Gardening to be featured

Due to the great enthusiasm shown by visitors to the first spring Horticultural Workshop held last year at the Garden, the staff has decided this year to extend the hours of the program. The Workshop will be held on Saturday, March 9th and Sunday, March 10th and will be open from 10 A.M. until 5 P.M. both days. Open to the public (regular Gate admission will cover admission to the Workshop), the displays will be exhibited in the Floral Display House and in Head House. Members of the Garden Horticultural Staff, as well as outside experts, will be on hand to participate in the displays and to answer visitors' questions.

As in last year's program, which drew a crowd of 4,200, the emphasis of the Workshop will be on spring gardening in the St. Louis area. A number of commercial nurseries will display samples of the many varieties of plants and garden equipment available in and around St. Louis.

Among the very practical topics the Workshop will present are:

Vegetable gardening, especially for small lot owners and apartment dwellers.
Seed sowing and transplanting.
Grasses suitable for St. Louis, and their care.
Sod web worm control.
Common weeds and their control.
Roses, their selection and care.
Tree Planting, pruning and feeding.
Ground covers and how used.
Houseplants, featuring terrariums.

The March Workshop offers a unique opportunity as a source of ideas and expert advice on all aspects of home gardening. We suggest you come equipped with paper and pencils. There will be a wealth of detailed information you will want to make note of for future reference. □

MARCH GARDENING

This is the month when gardening activities really take on a new emphasis. Plans and activities started now have a big effect on the garden in the coming months.

The last, heavy **pruning** should be completed. Trees and shrubs that were winter damaged should be pruned now, such as Althea (Hibiscus), Buddleia, Vitex, Caryopteris. Spring flowering shrubs are not pruned until immediately following flowering, except to remove broken or damaged wood.

Clean up the garden and really work at getting rid of **chickweed.** It started to grow a month ago, and already has set seed. Early eradication is important, otherwise the job is really never ending. Herbicides especially for chickweed can be used in open areas, but care is needed so that it does not get on other plants.

Do not remove **mulches,** but wait until heavy frosts are over, then remove gradually. Apply mulches around new shrubs, etc., to control moisture and weeds.

Lawns should be thoroughly raked, cut close, and bare areas reworked, adding humus and reseeding as early as possible. Apply fertilizer to all lawns now, using ones low in nitrogen, as 6-12-12. Avoid weed and feed combinations, especially near trees and shrubs and other garden plants, as it can cause serious damage or loss. If weeds are a problem, find out what the weeds are and use recommended sprays for specific types. Lime should only be applied if a soil test indicates and then best done in fall, once in every 3 to 4 years. Over-liming is detrimental to lawns.

New **trees, shrubs** and **evergreens** should be set out now so roots can get established before hot weather. Dig holes twice the size needed and replace old soil with new that is well mixed with organic matter, such as peat moss, compost, etc. Prune out approximately one third of the growth to compensate for the root loss.

Grapes, if not pruned earlier, should be pruned back to 6 - 8 eyes from the main stem and retied to trellis or arbor.

Asparagus beds should be thoroughly cleaned and bone meal or superphosphate worked in around the plants. Apply 3 to 4 inches of good compost to bed to control weed growth. New asparagus plants should be set out. Dig a trench 1-1/2 feet deep, then place 8 to 10 inches of rotted manure or compost in the trench. Next, add 3 to 4 inches well enriched top soil and bone meal on top. Place roots 18 inches apart and cover with 2 or 3 inches of good compost or enriched top soil. As plants start to grow, slowly fill in balance of trench with compost. Keep plants well watered the first year and do not cut any stalks for cooking.

Start early **vegetables** such as cauliflower, cabbage, peas, spinach as soon as the ground can be worked. Tomatoes, egg plants, peppers can be started indoors for later use outside any time from the middle of the month on.

Bonemeal should be worked in lightly around **perennials** being careful not to cover up the tops of tender ones. Set out new perennials and biennials.

Coldframes should be thoroughly cleaned up and annuals started for later use in the borders.

Compost piles should be cleaned up and new debris from the garden added. Keep well watered to hasten decay.

House plants should be starting to show new growth. Prune back if leggy and step up watering as growth becomes more active. Start regular feeding programs to keep plants active and healthy. Inspect for scale or other insects and, if present, clean up plants by thorough washing or spraying. On warm days, plants may be moved outdoors for a couple of hours to allow room to spray. Use sprays that are safe and follow directions carefully. Mist spray more often with better light and growth.

Space in the **home greenhouse** is now at a premium. Ventilation now needs careful attention due to temperature fluctuations. Insect control is more critical and must be watched. Sprays need to be carefully applied at regular intervals to avoid buildups in the plants. If special problems exist, call the Garden for advice. Don't plant annuals too early, and avoid crowding. Short, stocky plants are preferred to leggy, thin ones. Have coldframes ready to move hardier stock to and use for hardening off plants before placing outdoors in permanent beds.

All **garden equipment** should be in top working order now. If this is not ready, give it top priority. Sharp tools are easier to work with and mower should be ready to use as soon as grass is ready for first cut.

Continue feeding **birds** and have nest boxes set up early. Birds consume tremendous numbers of insects in the garden, especially during and after the nesting period.

In **purchasing** seed or plants for the garden, select varieties that are especially bred for hardiness and insect and disease resistance. Tomatoes in this area need to be Verticillium – Fusarium resistant. Big boy and beef steak tomatoes are not disease resistant and were planted by many people last year and resulted in total failure.

Plan the **vegetable garden** carefully for the most efficient use and as an early crop comes out, replant the same area with another type to come into production later. An example is peas, followed by beans; broccoli followed by tomatoes. ☐

The planting of 65,000 **spring bulbs** at the Missouri Botanical Garden this year offers an unusual display which should delight and inspire gardeners of all persuasions, amateur and professional alike. Gardeners will be able to see at the Garden the many possibilities bulbs provide for both formal beds and for informal planting in lawns and shrub areas.

Robert Dingwall, head of the Garden's Horticultural Staff, offers the following advice to gardeners whose own bulbs are coming to blossom now:

In formal beds, bulbs (with foliage intact) should be dug up soon after flowering ends. Make sure you get as much of the root as possible. These can then be planted in trenches (at the same depth as original planting) in compact areas behind shrubs. The bulbs can be trench-planted very close together, actually touching each other. Incorporate bone meal in the trench soil, water well to firm the soil around the bulbs, and follow seven to ten days later with a liquid fertilizer feeding so that the bulbs will form new bulbs. Foliage will die down in six weeks and once this happens, the bulbs should be dug up and stored in a cool, dry area until late August or early September. At that time they should be cleaned and sorted according to size. The larger bulbs should be planted in beds for spring display. The smaller ones are better planted in nursery rows for a year or two or otherwise discarded. Some new bulbs purchased each fall can give the gardener a wide ranging display of different varieties over three or four years.

There are many bulbs that can be allowed to remain in their present planting and which will continue to bloom for several years without depleting themselves. Such bulbs should have a good application of bone meal around them immediately after flowering. The present flower exhausts the bulb and a good feeding program is needed to replenish and build up new bulbs. Flower heads should be removed after wilting – if allowed to seed, they weaken the plant. Foliage should *not* be removed for at least six weeks after flowering and preferably not until it begins to turn yellow. At that point, the dead foliage can be cut off level with the ground.

In areas where bulbs are allowed to remain for a few years, if there is room, annuals planted between them will fill in and give good color in the summer. Examples of annuals that do well in the St. Louis summer heat are petunias, snapdragons, zinnias, marigolds, and cleomes (or "spider flowers"). Zinnia seeds often produce flowers as good or better than those from small plants. The cleome is particularly fond of heat, blooms from summer late into fall, and once you have started it you are likely to have it forever as it reseeds itself actively. ☐

THE SPRING FLOWER SHOW

The 1974 Spring Flower Show will be open to the public in the Floral Display House from March 30th through April 21st. This year's show will include nearly every imaginable spring blossoming plant along with an enormous selection of summer flowers. In the Garden greenhouses, over 2,000 pots are being prepared for simultaneous flowering so that, on opening date, the entire Floral Display House will be ablaze with the blooms of all the old favorites – daffodils, narcissus, tulips, hyacinths, stock, azaleas, geraniums, lilacs – and those of new varieties of lilies, daisies, dianthus, peonies.

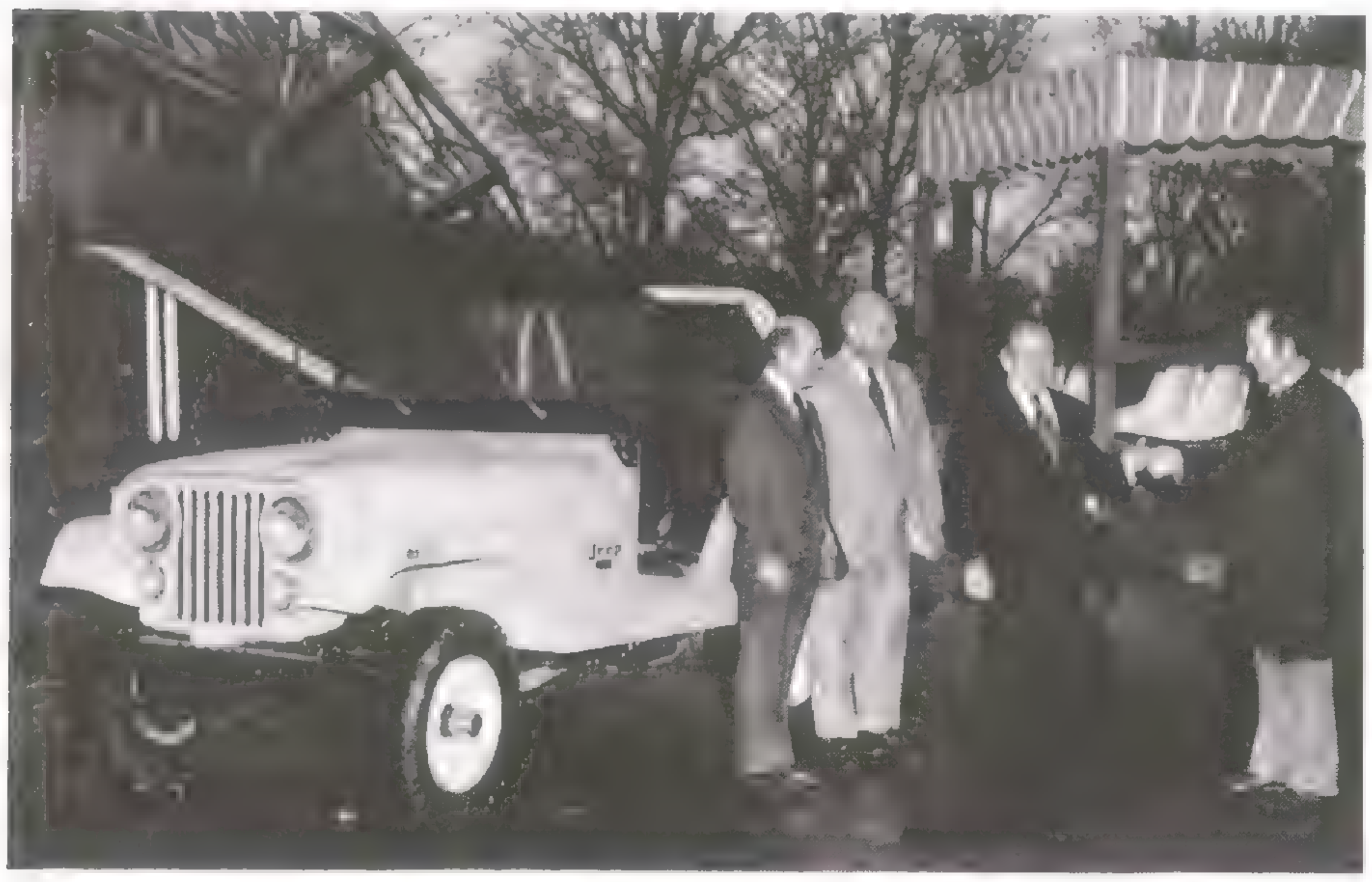
For the first time in the history of the Spring Show, there will be a display of roses. Thirty-six different varieties of tea roses will be featured along with a climbing rose (called "Golden Shower") and two dozen types of sweetheart roses. There will also be many more flowering trees in this show than in previous years. The staff has ordered weeping cherries, flowering crab apples, dogwoods and, several white wisteria trees. The Japanese kwazan cherry, a vertical cherry with a height of between 12 and 15 feet, will be an especially striking new addition. More varieties of flowering shrubs than in the past will be on view including forsythia of two unusual shades (a very pale yellow and a deep gold), Japanese quince, lilacs and hydrangeas. 4,000 bulbs will be blooming in formal crescent shaped beds. Many of these are tulip bulbs whose blossoms range in color from white to 'black' with every color on the spectrum between. A most unusual yellow hyacinth, called "City of Haarlem," will be shown for the first time at the Garden.

In a giant diamond shaped bed at the center of the hall, masses of spring blossoms of all varieties intermixed with marigolds, zinnias, daisies ("Gloriosa," "Shasta," "Felicia"), tritomas (or "Hot Pokers"), larkspur, delphinium, snapdragons, cannas, upright geraniums, and violets. So that visitors can get a close look at all of the species and varieties, a footpath will wind through the big center bed. Overhead will be hanging baskets of vine geraniums and petunias.

Just imagining the perfume of all these blossoms should be incentive enough to visit what promises to be the lovliest annual spring flower show in the Garden's history. Come early and often! ☐

The Spring Flowers promise to be spectacular. Tom Landzaat of the greenhouse staff (left) checks plants being grown for the display. Members will preview the Show March 29 from 5:30 – 7:30 p.m. More than 2000 Members attended the Orchid Show Preview Party (below) held in the Climatron on February 1.

A Jeep has been made available to the Garden through the Jeep dealers of St. Louis. It will be used to pull the Flower Wagon. Presenting the keys (below left) to Dr. William Klein, Asst. Dir., are: l. to r. Carl DiSalvo of DiSalvo's Inc., Maurice Wickmann of Aspen AMC/Jeep Inc., and Leo Reuther of Reuther Jeep Sales.



REQUEST FOR INFORMATION

Anyone having any information concerning the Henry Shaw Gardenway Association, or having any written records of this association which they may be willing to donate or loan to the Garden's archives, is requested to contact James Reed, the Head Librarian.

The Henry Shaw Gardenway Association was created in the mid-1930's by a group of interested citizens who wished to create a fitting tribute to the memory of Henry Shaw by providing plantings and landscaping on that part of U.S. Highway 66 extending from Lindbergh Ave. to the Garden's Arboretum and Nature Reserve at Gray Summit. A master plan for this project was developed with assistance from the State Highway Department and the National Park Service, but only a small portion of the plan was actually completed.

The Garden's archives contain a few of the records for the Gardenway project, but there are many gaps in our collection. Any assistance that *Bulletin* readers can provide will be gratefully acknowledged. □

FAIR SHARE

The staff of the Missouri Botanical Garden achieved their "Fair Share" percentage for the 1973-1974 United Fund Campaign.

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LIBRARY COMPLETES SET OF IMPORTANT SCIENTIFIC PUBLICATION

In 1869, Sir Joseph Norman Lockyer, a young self-taught astronomer who became one of the pioneers in astrophysics, approached the leading British scientists of his day to gain support in his desire to publish a weekly periodical that would keep researchers informed of the progress not only in their own specialties, but in other scientific disciplines as well. With the encouragement of such dignitaries as Sir Joseph Hooker, Director of the Royal Botanic Gardens at Kew, and T. H. Huxley, the evolutionist, Sir Joseph began to publish *Nature,* the first issue of which appeared on November 4, 1869.

Examining this first issue, one notices an advertisement for the elephant folio of Audubon's *Birds of America* at £200 – a publication now valued at $250,000 or more. One also finds the following note:

> "The public anxiety about the fate of our great explorer, Dr. Livingstone, has been anything but allayed by the recent telegrams from Bombay and Zanzibar . . . In the meantime, we wait and hope . . . "

For more than a century, *Nature* has successfully continued this policy of keeping abreast with the news of the world of science. Now in its 247th volume, it is a required part of any scientific library.

The Garden's library has recently been successful in filling several gaps in its holdings of this important publication. With the exception of a few scattered issues, the Garden's set of *Nature* is now complete, and is available for use by the Garden's staff and visiting researchers. Efforts are continuing to obtain those few missing issues, and dealers throughout the world have been contacted to assist in our efforts. □

MARCH – MISSOURI BOTANICAL GARDEN MONTH AT ST. LOUIS PUBLIC LIBRARY

The month of March, 1974, has been designated as Missouri Botanical Garden month at the St. Louis Public Library, with a theme of A Celebration of Spring. Included in this program is an exhibit of botanical art and illustration, which was prepared by the Garden library and which is presently touring the state under the sponsorship of the Missouri State Council on the Arts, at the Main Branch of the Library.

Other features of "A Celebration of Spring" include displays of books from our rare book collection, live plant materials, lists of recommended readings on various gardening and horticultural topics. The following public lectures will be given by the Garden staff: "Shaw's Garden through the Years" Dr. Peter H. Raven, March 5, 12:15 p.m., at the Main Branch; "Indoor Gardening", Dave Balster, March 12, 2:00 p.m., at Lashly Branch Library; "Terrariums", Nancy Kreutz, March 20, 2:00 p.m., at Carpenter Branch Library; "Spring Gardening", Robert Dingwall, March 26, 2:00 p.m., Baden Branch Library. □

MISSOURI BOTANICAL GARDEN LIBRARY PRESERVATION PROGRAM

The greatest problem is preserving the materials in our possession. Many books and manuscripts, both old and new, need prompt attention from conservators and book restorers before they disintegrate completely. Between 1/2 and 2/3 of the materials in this library need at least some attention to repair the damage of the past and to prevent future deterioration.

The art of book binding and restoration takes many years to master, and the Garden is fortunate to have on its staff and as volunteers several people skilled in this important craft. If this part of the library's activities is to continue at its present pace, additional financial support must be forthcoming. Your contributions, of whatever amount, constitute an important part of the book restoration program. Contributions of the Missouri Botanical Garden are tax deductible. Donations should be directed to the attention of the *Director* or the *Head Librarian.*

I wish to contribute $________to the book restoration program.

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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Missouri Botanical Garden Bulletin

During the month of April, the Arts and Education Council of Greater St. Louis will be making its annual drive in the community for funds to support the member institutions. The Garden is one of the major recipients of the A & E Council. During the current fiscal year, ten percent of the Garden's income has come from this source. SUPPORT THE ARTS AND EDUCATION COUNCIL – GENEROUSLY.

NEW PLANTINGS AT THE GARDEN

Many of the new plantings at the Garden are selected to introduce new plants to the St. Louis area – plants selected for their beauty, as well as hardiness in our very demanding climate. Information about these new plants will appear regularly in the BULLETIN.

Swedish Birch, planted north of the John S. Lehmann Building. The site, carefully selected to enhance the beauty of the tree when reflected in the mirrored walls of the building, reminded the Garden's Curator of Hardy Plants, John Elsley, of a quote from the late James Comber, head gardener of Nyman's Gardens, Sussex, England: "One pays a shilling for the plant, and a pound for the planting."

A specimen of the "Swedish Birch", *Betula pendula* 'Dalecarlica' was planted on January 24, 1974 in the lawn between the north end of the Lehmann Building and Tower Grove House.

The poet, Samuel Taylor Coleridge describes the species as 'most beautiful of forest trees, the Lady of the Woods'. This particular geographical form from Sweden is taller and more slender than the species and is one of the most desirable and distinctive trees for specimen planting. It can be profitably utilized in gardens where restricted space often limits the choice of suitable subjects – a mature specimen could reach 50' high with a spread of approximately 15' in around 30 years. By maintaining its fascination and interest the whole year round the Swedish Birch can truly be considered a multi-purpose subject; and in common with most birches, is not overly demanding in its cultivation requirements. It will succeed on most soils, both damp and dry, but for healthy growth prefers several feet of fertile soil.

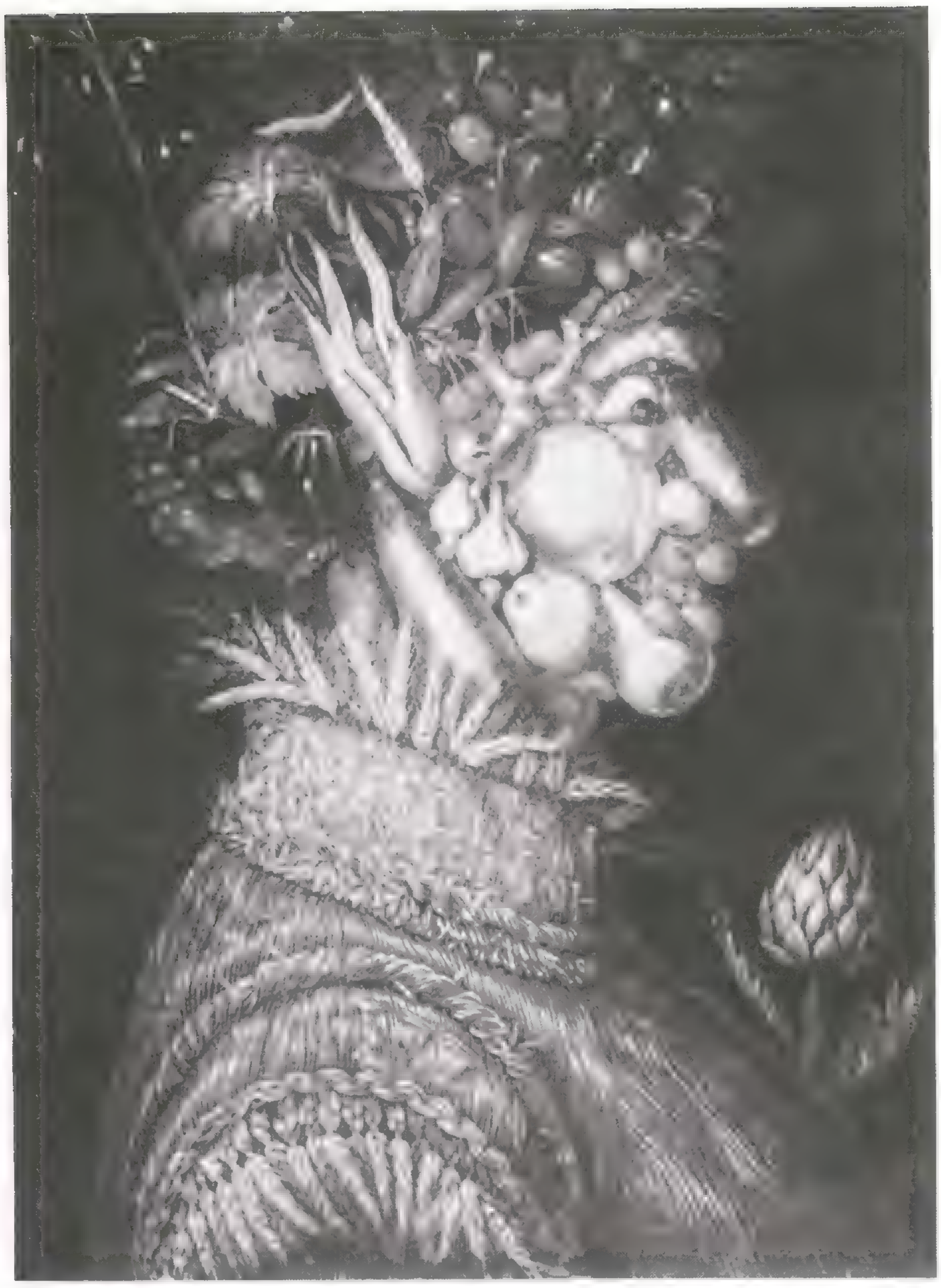
The overall appearance of this decidious tree is graceful and delicately elegant, these features enhanced by the terminally pendulus habit of the young branches. Individually, the leaves are deeply cut, the coarsely toothed lobes extending inwards nearly reaching the leaf midrib. Each leaf stalk or petiole is over an inch in length; when the tree is subjected to even a slight breeze a pleasing "shimmering" effect results. A factor observed with many birches is the bark of the trunk and old branches – prominent features at all seasons but especially during the winter months. Sited in this position, we are able to fully appreciate the aesthetic appeal of its partially peeling silvery-white bark as it is doubly highlighted by the dark reflecting glass of the adjacent Lehmann Building. On sunny winter days the rich red-brown color of the younger branches markedly contrasts with the older branches and trunk. In order to exaggerate the visual appeal of the trunk, many birches are allowed, from an early stage, to develop as multi-trunk specimens. A second example of the "Swedish Birch" was recently planted in the lawn immediately south of the Garden Gate Shop.

According to the late Nils Hylander (a much respected Swedish botanist) the original specimen of the Swedish Birch was first discovered in 1767 and originally described by the younger Linnaeus in 1781. This plant grew at Lilla Ovnäs in the province of Dalarna (Dalecarlia) in central Sweden but was evidently destroyed during a storm in 1887. Fortunately, graft-wood was obtained prior to this destruction, this original graft-wood being eventually cultivated in the Stockholm Experimental Garden. From this initial clonal material all of today's true "Swedish Birches" have descended by vegetative propagation.

The Swedish Birch was generously donated in memory of Miss Betty Wolfrom by her co-workers at the Long Island College Hospital, Brooklyn, N.Y. ☐

John E. Elsley

Volume LXIII Number 3
April, 1974



Portrait of man by Guiseppe Arcimbaldo, painted in 1572. Vegetables included in the portrait are corn, zucchini, peas, eggplant, squash and artickoke.

BE YOUR OWN VEGETABLE MAN – PLANT A VEGETABLE GARDEN

Skyrocketing food prices have had one positive side effect – more and more people are returning to the nice old notion of growing their own vegetables. Not only will home vegetable gardens cut individual food costs, they will also reintroduce to Americans the taste of really fresh vegetables, a taste worlds apart from that of mass produced vegetables which, by the time they reach the supermarket bins, have traveled hundreds of miles and passed through many hands.

If you are considering a garden for your own back yard, get started now. Early spring is planting time for many vegetables that can withstand cooler weather.

The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

Lorine H. Compton, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

Choosing a site for the vegetable garden is your first step. It should be an area that receives direct sun for most of the day (six to eight hours minimum). It must be free of tree roots that use up valuable moisture and nourishment and it should be a relatively well drained area.

Preparing the soil is next on the agenda. Your garden will be only as good as the soil it grows in. In most St. Louis locations, the soil tends to be a heavy clay type that is short in organic material. Once you have plotted the garden and dug or worked it up with a shovel if it's a small area, or with a plow if it's larger, incorporate plenty of organic matter – peat moss, compost, leaf mold, or animal manure – and work it in to a depth of 4 to 5 inches. If the area has not been limed in recent years, ground limestone should be applied at a rate of 3 to 4 pounds per 100 square feet. Lime will help to sweeten the soil, but more important, it adds calcium to strengthen the plants and to help release other nutrients in the soil.

Many people, using their yard for a garden for the first time, will want to have a soil test made to determine the pH rating and to find out what other nutrients their soil lacks. The results, when they come back, should be used as a guide, but, as time is short and because the soil should be prepared as soon as the ground can be easily worked, continue to prepare the soil according to the outline above. Also generally recommended is the addition of bone meal or super phosphate at the rate of 4 to 5 pounds per hundred square feet. The bone meal or phosphate should be worked in along with the organic matter.

High nitrogen should be avoided in the early stages of the garden as it stimulates too much growth at the top of the plant when the first essential is root growth. When organic matter is added properly, the soil receives sufficient nitrogen for growth to begin.

Once soil has been thoroughly worked up, it should then be raked smooth and to a moderate fine texture. It is then ready to receive the seeds and young plants.

Drawing up a garden plan will prove to be extremely helpful to you. Do it before you sow and plant, making the plan on graph paper and using a scale of 1 inch to 4 feet. Indicate on the plan the direction of north and south. With your list of desired vegetables at hand, proceed to lay out a planting plan. It is important, in doing this, to figure out in advance how to get the most from your limited space, thus you will want to indicate on your plan a design for succession planting. Start quick maturing vegetables early, follow them with ones needing warmer conditions – for example, radishes followed by beets; peas by beans; cauliflower by tomatoes. Many vegetables can be started as soon as the soil can be worked, while others cannot be set out until all danger of frost is over. Most good seed catalogues provide sample garden layouts (and, of course, you may contact the Garden for further information).

Study seed catalogues carefully and, when ordering your seeds, select the hybrid varieties that are bred for disease resistance, uniform production, and vigorous growth for our area.

There are some vegetables, like tomatoes, cabbages, onion sets, with which it is preferable to start the seed indoors or to purchase as established plants. In either case, the young plants should be "hardened off" by having been subjected to gradually cooler conditions.

Other varieties can be very successfully sown directly to the garden following the instructions on the seed package. Once your vegetables begin to grow, they should be thinned, again, as recommended on the seed package.

Weeds must be kept to a minimum and hand weeding will be a necessary chore in the rows themselves. You must be careful to pull the weeds before they grow large enough to interfere with the growth of the good plants. Cultivate shallowly around the plants regularly to control weeds and to keep the soil open. As a further deterrent, light mulches can be applied once plants reach their height. Suitable mulches (which also help conserve moisture) are partially decayed leaves, straw, grass clippings, newspapers. Black plastic around tomatoes, melons and cucumbers will not only control weeds, it will also draw extra heat allowing these plants to grow faster and produce fruit earlier.

Fertilizing, once your plants are growing well, can improve that growth. The best method is to make small furrows about 2 inches from the rows of plants. Then, either broadcast dry fertilizer into the furrows by hand, or use a water soluble fertilizer and water it into the furrows. Cover the fertilized furrows as if covering seed so rains will not splash the fertilizer on the plants and cause burns. Be careful not to over fertilize.

Watering will be necessary during dry periods. A thorough watering every ten days should be adequate if it is equivalent to at least 2 inches of rain. Use a soil soaker or slow stream of water from the hose and do the watering early in the morning or late in the afternoon, being sure that the plants have a chance to dry off before nightfall. Plants left wet during the night are commonly subject to many disease problems.

Insect control is sometimes, though not always, a problem. You should watch your plants carefully for signs of trouble in the form of disease as well as insects. If a plant is poor or malformed, rogue it out rather than try to nurse it along. If you do see insects, observe them for awhile to make certain they are doing real harm. If they are, then control is necessary. Just a few insects can be taken care of by washing the plants with the garden hose. If they persist, they will have to be eliminated with a spray. Choose sprays with caution. Good ones are Derris Dust and Dx, a form of pyrethrum and rotenone. Follow spray instructions exactly and remember that many insecticides can be extremely poisonous.

Harvest your vegetables as soon as they are ready and eat them as soon after picking as you can in order to enjoy the best flavor and nutrition. Keep cucumbers, tomatoes and squash picked so that the plants continue to produce right through the summer. Your surplus — frozen, canned, or pickled — will be welcome indeed in the winter months.

Stephen Wolff, of the Garden's Horticulture staff, discussing vegetable gardening at the Spring gardening workshop.

For more ideas and for first hand proof of the great variety of vegetables which can be successfully grown in the St. Louis area, vegetable gardeners should be sure to visit the Missouri Botanical Garden's own Vegetable Test Garden. The Test Garden, being prepared and planted now, is located just east of the Camellia House. Very near it is another, smaller area devoted to patio vegetable gardening. Here the apartment or town house dweller can see how much can be done in the most limited space. Container gardening has become increasingly popular and vegetables specially selected for growing in pots will be displayed. They include Tiny Tim tomatoes, dwarf cucumbers, lettuces, radishes, beets, carrots, onions, and the patio gardener's favorites — herbs of all kinds. ☐

April Gardening

Much color is found in the garden this month and it's a good time to look at the spring bulbs and make notes on where to add others next fall. When the plants have finished blooming, cut just the flower head off (no leaves) so as to let the bulb now produce food for the new bulbs for next spring's color. If it hasn't been done earlier, bonemeal should be worked in lightly around the bulbs.

Ventilation in the cold frame and small greenhouse is very critical so as not to get a buildup of heat. Some shading may need to be applied to prevent burning. Watch and control insects as they can multiply quickly now. Space plants for good air circulation and step up feeding to encourage new growth. Pinch plants to encourage more branching.

Vegetable planting should now be well under way in order to get most things in the garden. Only very tender plants, such as tomatoes and beans, must be held up until later.

Summer bulbs, such as gladiolus, should now be placed at 3-4 week intervals to insure a continuation of color for later in the summer. Many of the hardy annuals may be set out in soil well prepared with organic matter and bonemeal.

Easter lilies, once the blossoms are gone, should have just the flowers cut off. The plant should then be placed out in the garden where it gets some shade and planted 2 to 3 inches deeper than in the pot. It will gradually die down, to emerge later with a new stock and possibly some blooms late in the season. Leave it outdoors where it will survive from year to year.

Roses should now have all the mulch removed. Add organic matter to beds and feed about one cup of bonemeal to each plant. Complete pruning of roses before growth gets too active, being careful to prune out all weak and dead growth and leading good canes back to proper height and an outside eye. New roses should be set out immediately and kept well watered until growth commences.

Azaleas and rhododendrons should have all dead and broken ends cut off. Feed with acid fertilizer or cottonseed meal. If plants are a light green color (Chlorotic), feed with iron. Do not cultivate around the base of these plants as they are surface rooting, but add mulch to prevent weeds and conserve moisture.

Hardy annuals may be set out about the middle of the month, once they have hardened off. Seed of many annuals, such as alyssum, zinnias, marigolds, California poppies, may be sown directly to the garden. Select some of the newer hybrids that produce more bloom and longer periods of flowering.

Evergreens and other shrubs should be checked for winter injury. Prune out dead or broken branches and work in bonemeal and a good, balanced fertilizer. Apply mulch as suggested earlier. New plantings of trees, shrubs, and evergreens should be completed this month. Stake if necessary and apply mulches around each plant to a depth of 3 to 4 inches to conserve moisture and prevent weeds.

Practice good weed control now before weeds have a chance to set seeds. Pulled weeds are ideal additions to the compost pile. The compost pile should be turned as soon as time will allow. Add water as needed to hasten decay.

Wood ashes saved from the fireplace may be broadcast on the garden around lilacs, delphiniums, mums, and columbine. Wood ashes help to deter slugs and cut worms.

Lawn areas not reworked and seeded last month should be done immediately. More attention to watering will be needed from now on. Keep lawn mowed regularly and be prepared to raise the mower cut up as weather gets hotter. Cutting too close in hot weather hurts the lawn by not allowing the grass plants to manufacture food. As a result, the grass becomes thin, letting weed seed in. Fertilizer not put down earlier should be applied now. The second feeding of a low nitrogen fertilizer should be applied to the lawns late this month. Avoid using weed and feed types in any area where tree or shrub roots are growing as they can cause loss of the plants. Also, weed and feed types should not be used during hot weather. Dacthal, a pre-emerge for crabgrass, should be applied about the middle of the month to prevent the seed from germinating. A second application will be needed in early June to give effective control for this year.

Ground covers, such as ivy, euonymus, pachysandra, etc., benefit, if they have become leggy and open, by shearing back early this month. To do this, raise the mower cut up so it cuts no closer than 4 to 5 inches from the ground and mow over the ground covers. Remove cut ends and apply a good, balanced fertilizer to over-all area.

Keep good records of the garden, starting immediately and making notes as to later changes. Also record names of varieties you particularly like in others' gardens. □

Annuals Test Garden

Since early spring the Garden greenhouses have been sheltering the annual seedlings which are now being readied for planting in the Garden's Test Garden for Summer Annuals.

Among the All-America Selections award-winners from 1973, '74 and '75 to be included in the Test Garden are Marigolds "Happy Face" and "Showboat," Dahlia "Redskin," Carnation "Juliet," and Zinnias "Scarlet Ruffles" and "Peter Pan Scarlet" and "Orange."

The two new Peter Pan Zinnias bring the number of separate colors in this popular breed to four, all of which have won awards in previous years. The Peter Pans combine attractive, large flower size with dwarf plant habit. In the home garden they remain neat and compact, tolerate adverse weather with ease and produce masses of blooms.

The All-America Selections was founded in 1932 to test new varieties of flowers and vegetables grown from seed and to make awards of recognition to the most outstanding. The organization has 65 display gardens open to the public throughout the United States.

Also to be shown in the Test Garden are new varieties of Asters, Calendulas, Gloriosa Daisies and Verbena from the W. Atlee Burpee Seed Company of Pennsylvania. Goldsmith Seeds, Inc. have supplied the Test Garden with samples of the five colors of the Dianthus "Magic Charms," all of them recent winners of All-America Selections awards. The colors are scarlet, crimson, pink, coral and white. The Dianthus Magic Charm is the first hybrid Dianthus mixture and has the brightest color range yet produced in Dianthus. Flowering begins in early summer and continues through until late fall. In most locations, the plants will winter over for a repeat display the following spring.

The Test Garden for Summer Annuals, which will, according to current plans, be situated in front of the Camellia House, will provide local gardeners with a living display of the great range of summer flowers that thrive in the St. Louis area. □

Garden, Floral Display House

ST. LOUIS HERB SOCIETY ANNUAL PLANT SALE
SATURDAY, 27 APRIL, 1974

On Saturday, April 27 in the Floral Display House, the St. Louis Herb Society is making available the most exciting array of herbs yet presented for sale. In keeping with the policy of the Society which was founded to study "herbs for use and knowledge", members will continue to introduce the public to the great versatility of this body of plants.

Strong emphasis will be on the fragrant herbs, many of great beauty and interest. Most herbs have aromatic properties, but some like spice pinks, viola odorata, the scented geraniums, mignonette and lavender are an especial delight to the senses. Plant a garden or a bed just for fragrance. Try a fruit scented bed of lemon thyme, apple mint, pineapple sage, lemon balm and lemon verbena.

There will also be available the usual and not so usual array of culinary, salad and tea herbs, plus charming Alpine strawberries.

The ground cover thymes, insect repellants such as nicandra, historic medicinal plants such as foxglove, feverfew, camomile and pennyroyal will also be represented.

There will be one section devoted to dye plants where limited quantities of woad, bedstraw, and safflower can be found.

Seed for some of these plants has been obtained from as far as Turkey.

Some 12,000 plants in all, representing about 65 species — 5 varieties of basil alone, 6 of thyme, 5 of mint and 6 of scented geraniums.

Come see and learn and buy.

The entire net proceeds of this *one* day sale will go to the maintenance of the greenhouses at the Missouri Botanical Garden.

A new efficient check-out system inaugurated last year will expedite your purchases.

Hours are 9 a.m. to 4 p.m. Bring a box, and use the Alfred Ave. entrance.

C. C. JOHNSON SPINK ELECTED TRUSTEE OF THE GARDEN

Mr. C.C. Johnson Spink, editor and publisher of *The Sporting News,* has been elected to the Board of Trustees of the Missouri Botanical Garden.

A prominent St. Louis businessman, Mr. Spink has been very active in civic organizations. He is currently a Member of the Board, on the Executive Council and Chairman of Safety Services for the St. Louis Bi-State Chapter of the Red Cross: serves also on the Boards of the Municipal Opera, St. Louis Institute of Music, Saint Louis Symphony; and is a Member of the Lay Advisory Committee of the St. Louis Medical Society.

He has been active on the *The Sporting News* and in the whole field of amateur and professional athletics for over 35 years. He is the recipient of the Elks Bruce A. Campbell Memorial Award for Meritorious Service to Sports and an award from the Advertising Club of Greater St. Louis in recognition of his long and outstanding service to the community. □

SOUTH ROSE GARDEN EXPANSION

Plans have been completed for the enlargement of the South Rose Garden to incorporate the area from the previous site down to the new Shapleigh Memorial Fountain. The new beds are being prepared this month and finishing touches are just going onto the planting designs. The enlarged garden will feature many of the past award winning roses as well as the three 1975 winners.

Further details of the larger rose garden will be carried in a later *Bulletin.* □

春 祭

HARU MATSURI

A Spring Festival to Benefit the Japanese Garden at the Missouri Botanical Garden

A Spring Festival will be presented by members of the St. Louis Chapter of Ikebana International at Ladue Chapel, 9450 Clayton Road. There will be a preview, for Sponsors, on Thursday evening, April 18 at 8 p.m. The Festival will be open for the public from 10 a.m. until 5 p.m. on April 19. It is being presented as a benefit for the continued development of the Japanese Garden at the Missouri Botanical Garden.

The exhibit will be designed in traditional Japanese fashion, and will include many beautiful flower arrangements. Several schools of Ikebana will be represented, such as Ohara, Sogetsu, Ikenobo, Koryu, Shofu. An outstanding feature of the Festival will be a Japanese Garden with a display of Bonsai.

For hundreds of years the Japanese have practiced the art of Ikebana. A very weak and inadequate translation of this word is *flower arranging.* A truer picture might be given if it is said to mean *art of the flowers,* developed through infinite ingenuity with love and understanding of the flowers. The art is a great deal more than placing flowers in a container to look pretty. Ikebana implies an attitude toward the blossoms which is based upon a way of looking at and living with nature. It is a philosophy – the basic principle of which lies in extracting more refined and subtle beauty from plants in their natural state.

Ikebana International was established in Tokyo, Japan in 1956. It was the idea of an American service wife, Mrs. Frank Allen, Jr., who had been studying Ikebana while in Japan. Upon returning to the United States, she conceived the idea of encouraging international friendships through this media. The St. Louis Chapter was the third to be organized. There are now chapters in every part of the world.

A traditional Japanese Garden is now being constructed at the Missouri Botanical Garden in St. Louis, a very appropriate setting, as the first Japanese Garden in the United States was seen at the World's Fair held in this city in 1904. The design for the Japanese Garden, now in the very first stages of development at the Missouri Botanical Garden, is a gift to the citizens of St. Louis from the St. Louis Chapter of the Japanese American Citizens League. For many years it has been the desire of the Citizens League to have a "meeting place for man and nature" for the public to enjoy. In spring of 1973, the Board of Trustees of the Garden announced that the Garden was to be the site.

Mr. Koichi Kawana, a very prominent Japanese landscape architect, was engaged to design the traditional Japanese Garden. His plans for the Garden are now complete, and initial construction has begun, the enlargement of the lake in the southwest area of the Garden.

Haru Matsuri, is to benefit further construction of the Garden. Sponsors contribute $10, which entitles two people to attend the preview of the Spring Festival, on April 18. Refreshments will be served. Please make checks payable to the Missouri Botanical Garden, and mail to Ikebana International, c/o Missouri Botanical Garden, 2315 Tower Grove Ave., St. Louis, Mo. 63110. Reservations will be held at the door.

The chairman of the Exhibit is Mrs. Kikue Shirasaki Atkins, a master in the Ohara and the Koryu schools. She was a member of the International Board of Directors until 1969, when she came to the United States. Co-chairman are Sogetsu Teachers, Mrs. James Searles, Mrs. Natsuko Dean, and Mrs. Daniel Poor is Staging Chairman. Mrs. Walter E. Morris is president of the organization.

Admission to Festival on Friday, April 19, is $2.00 for adults, $1.00 for children.

All proceeds from the Festival will go to the Japanese Garden. ☐

A FLOWER FESTIVAL – CHRIST CHURCH CATHEDRAL and the MISSOURI BOTANICAL GARDEN

April 27 – 28

In his will, Henry Shaw requested that on one Sunday each year the Garden beautify Christ Church Cathedral with a massive display of flowers and that a sermon be preached on that day praising God and the beauty of His world. Flower Sunday has taken place continuously, according to Mr. Shaw's wish, since his death in 1889. It has become a tradition at the Cathedral that the fourth Sunday in April be Flower Sunday.

This year, this beautiful tradition will be extended into a two day event, with the Cathedral and the Garden participating.

A FLOWER FAIR will take place on Saturday, April 27, from 10:00 a.m. until 4:00 p.m., at Thirteenth and Olive Streets, the area adjacent to the Cathedral. There will be a plant sale, displays of plants arranged around the outside of the building. Tours of the Cathedral will be offered, and refreshments will be served on the East Promenade of the Main Branch of the St. Louis Public Library. The Flower Fair will open with a ringing of the bells of the Cathedral, and during the day, music will be provided by the Library, as it does at noon time in Lucas Park.

For the *FLOWER SUNDAY* Service at 11:00 a.m., the Cathedral will be decorated with masses of flowers from the Garden, and there will be a procession with Dr. Peter H. Raven, Director of the Garden, and the Board of Trustees participating. The Flower Sunday speaker will be The Right Reverend John E. Hines, Presiding Bishop of the Episcopal Church. In the afternoon, there is to be a special concert, planned and directed by Dr. Ronald K. Arnatt, music director of the Cathedral. ☐

Woody Plants of the North Central Plains, by H. A. Stephens, 530 pp., Illus. 1973 (The University Press of Kansas), $20.

This attractively bound volume represents ten years of intensive study and travel by the author, a member of the botanical research staff of the University of Kansas. It is the first complete account of the woody and partially woody flora of the central plains states, (Kansas, Nebraska, North Dakota and South Dakota) with some 255 different species receiving attention.

Devoted to each species is a full page of text which includes an accurate botanical description, a summary of its habitat and distribution range in North America (plus a distribution map within the four states) and notes of general interest including cultivation and commercial aspects. It was interesting to learn, for example, that the timber of the Dogwood *Cornus florida* is utilized for the production of roller skate wheels and knitting needles!

Facing pages of pleasing line drawings (executed by the author from living specimens) depicting salient botanical features accompany the text, and, although the drawings are not to scale, sizes are indicated in the associated script. In addition to the specific descriptions, general notes on plant communities and the vegetation ecology of the four states are included, as are workable identification keys, a glossary of the botanical terms employed, a complete index and a useful bibliography.

Although not specifically related to Missouri, this scholarly work describes many species encountered in its flora, and although the publication will appeal primarily to the professional botanist, I feel convinced that this informative volume justly merits the valuable shelf space of those interested in the woody plants of our region. ☐

John E. Elsley

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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Missouri Botanical Garden Bulletin

Rose grower Alfred Saxdal

ENLARGED ROSE GARDEN IN BLOOM THIS SPRING

Construction on the newly extended South Rose Garden is finished and, by the end of the first weekend in May, all planting, including 1500 new rose bushes, will be complete to insure full bloom by the third weekend in May. The new Rose Garden, designed as a series of terraces, extends from the new Shapleigh Memorial Fountain to the Gazebo and more than doubles the size of the area devoted to the Garden's roses.

Fifteen new beds in the Rose Garden will feature the newest varieties of roses chosen as Award Winners for 1975 and 1976 by the All America Selections. Their display at the Garden will allow visitors to preview them a full year in advance of their availability to individual gardeners. Also among the new plants will be top rose selections contributed by leading U.S. hybridizers, as well as miniature roses and standard tree roses previously unrepresented at the Garden. Nearly all of the new rose bushes and plants in the Rose Garden have come as contributions from commercial growers eager to see their plants set off by the beautiful design.

The plan of the extended Rose Garden assures the visitor's full enjoyment and appreciation of the diversity of color and fragrance of more than two thousand rose bushes in a magnificent setting. The first terrace, around the Shapleigh Fountain, will include a circular lawn area studded with large blue stones in a random pattern that will reflect the fountain water. Roses — mostly new varieties — will form the boundaries of the lawn. The second terrace will feature a wider expanse of open lawn bounded by hybrid tea roses with a background of weeping cherries.

The third terrace will be devoted to five very large rose beds in which all new varieties will be displayed. The area between the third and fourth terraces will be planted with climbing roses of all colors, while the fourth terrace will be heavily planted with many of the best older roses. There are new beds as well in which additional new roses will be introduced. The fourth terrace, which extends to the Gazebo, will include two new small reflecting pools and several raised brick planters in which the miniature roses will be planted.

Recent construction in the extended Rose Garden has involved the removal of the asphalt path which divided the original "New Rose Garden" now nearly a decade in existence. New soil paths have been added and are specially designed to lead visitors between — and in some cases, *into* — the rose beds for a close view of the plants and their maintenance. Rose gardeners will be able to observe the new bushes growing throughout the summer and to evaluate them for use in their own gardens.

The Garden horticultural staff will, during the coming year, be introducing additional planting around the Rose Garden. Plantings of several types of hedges will serve to somewhat enclose the Rose Garden and add to its feeling of quiet and seclusion. And, on the east and west sides, new plantings will include evergreens, flowering dogwoods, more weeping Japanese cherries and naturalized daffodils for early spring color in the years to come. Clearly, the newly extended Rose Garden will soon become one of the leading attractions at our Garden. ☐

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May, 1974

ADVENTIVE FLORA — "Hobo Plants"

Dr. Viktor Muehlenbach, involved in independent research at the Missouri Botanical Garden since 1953, is now preparing a major scientific paper for publication in 1975. The paper, to appear in *The Annals of the Missouri Botanical Garden,* will describe the 393 species of "adventive flora" collected by Dr. Muehlenbach during his 600 excursions along the railroad tracks in St. Louis and in the city's railroad yards.

The study of adventive flora growing along train routes is, according to Dr. Muehlenbach, common in Europe. In this country, however, he is the only professional scientist undertaking such a project. Because the trains bring seeds from all over the country — indeed, from all over the continent — many examples of plants otherwise foreign to Missouri are found to be growing successfully in the yards and along the tracks. Such accidental or "adventive" plants sometimes persist for many years, but often do not become permanent inhabitants of the area.

Though the majority of the plants covered in the study are "weeds", there are also a number of "escapes" from cultivation. Plants native to Texas have been found to be frequent transplants to our region. Asked to name a plant that the layman would recognize as an unlikely inhabitant of St. Louis railroad area, Dr. Muehlenbach suggests "Joseph's Coat", a flowering plant known for its bright red foliage.

Dr. Muehlenbach believes that these days young botanists will be even less inclined to continue his work in the United States because of the powerful new herbicides and defoliants developed over the past five or six years and used increasingly by the railroad companies to clear the tracks of high growth and to keep switches free of weeds. Twenty years ago, the doctor recalls, weeds would reappear fairly soon after spraying. Now the tracks are rendered barren for years at a time.

Dr. Muehlenbach, born in Jelgava, Latvia in 1898, received his M.D. from the University of Riga in 1925, and an M.A. in natural science in 1931. His chosen field was preventive medicine (hygiene). In 1944, he and his family — his wife, a four year old daughter and a three month old son — were forced to flee to Germany. There they lived for six years in several Displaced Persons Camps. "I was allowed to work in the laboratories of the camp hospital for which I received some pay."

In 1951, the Muehlenbachs emigrated to America. They came first to Rolla, Missouri where Dr. Muehlenbach's brother-in-law was professor of metallurgy at the University of Missouri at Rolla. After many futile attempts to find work in his field — he remembers writing to some 40 prospective employers — Dr. Muehlenbach met Professor Bronnfenbrenner, a microbiologist at Washington University who helped him find work at the St. Louis Department of Public Health. Beginning as a technician, Dr. Muehlenbach soon worked his way up to staff microbiologist (on his second Civil Service Exam, he scored the highest grade recorded for the particular examination to that date) and he continued his career in the Public Health service until retirement at the age of 70 in 1968.

Dr. Muehlenbach's association with the Missouri Botanical Garden began in 1953. Through an introduction from Professor Dr. F. Markgraf, Director of the Zurich Garden in Switzerland, he was invited to attend a staff meeting and to discuss his plans. Soon afterward he started his major project on St. Louis railroad yard plants.

He remembers well Dr. Julian A. Steyermark who was particularly encouraging. Many of the unique records of exotic plants reported in Steyermark's *Flora of Missouri* are based on Dr. Muehlenbach's railroad collections.

More than sixty other scientists both here and in the Old World have had a part in his adventive flora projects.

Until 1968, Dr. Muehlenbach was able only to devote weekends and holidays to the project, but since retirement he has spent the better part of every day at his desk in the library studying the herbarium, or out walking the tracks.

He explains his original interest in railroad flora as the results of an accident he suffered at the age of 20. Having broken his leg (when asked how, the doctor turned to his dictionary and after some thumbing, answered with an enigmatic smile, "Through foolheartedness"), he was, for a long time, unable to hike into the hills and forests to collect specimens and so he used the streetcars to ride to his sites, the local rail yards. The result of this early study was a Masters thesis on the railroad flora of Latvia. □

LIBRARY RECEIVES GRANT FROM SUNNEN FOUNDATION

The Sunnen Foundation has awarded the Garden's Library a grant to convert one section of its book stacks into a locked cabinet for the secure storage of the Garden's archives and manuscripts. These manuscripts are an important part of the library's collection, including many of Henry Shaw and George Engelmann's papers, correspondence from most of the 19th century's greatest botanists, two pieces of Thomas Jefferson's correspondence, and many other treasures. Through the generosity of the Sunnen Foundation, these important documents can now be securely stored in the John S. Lehmann Building, where adequate temperature and humidity controls will help to prevent them from physical deterioration.

We extend our sincere appreciation to the Sunnen Foundation for their generous support of this phase of the Garden's operations. □

IMPORTANT ACQUISITION BY GARDEN'S LIBRARY

The Garden's library has recently acquired a copy of the limited edition 2 volume set *Francois LeVaillant: Traveller in South Africa* recently published in Cape Town. This publication, limited to only 2,500 copies, reproduces in full-color 165 of LeVaillant's watercolor paintings, executed during his visit to South Africa between 1781-1784. The set is of particular interest to our library because it includes nearly fifty of his paintings of South African plants and includes written descriptions to accompany each illustration. Also included are many paintings of South African wildlife, insects, snakes, birds, scenes of life in Southern Africa in the late 18th century, many native costumes, tools, coiffures and dwellings, and maps outlining the routes of LeVaillant's voyages. One of the most delightful paintings is a self-portrait of the artist limply extending his hand toward a quite demure-looking giraffe.

The presence of this set in the Missouri Botanical Garden Library will be of interest to botanists, historians, anthropologists, zoologists, and general readers throughout the St. Louis area. □

SAINT LOUIS SYMPHONY ORCHESTRA at MISSOURI BOTANICAL GARDEN, Friday, May 31, 1973 at 7:30 p.m.

The Missouri Botanical Garden is pleased to announce that the Saint Louis Symphony Orchestra will perform outdoors at the Garden, near the new Rose Garden south of the Climatron, on Friday evening, May 31. The Garden will open at 6:30 p.m. so that concert goers may enjoy the spring flowers before the performance.

Associate Principal Conductor Leonard Slatkin will conduct the symphony orchestra. The program includes *Serenade for Strings,* Elgar; *Serenade for Winds,* R. Strauss; and *Serenade No. 2,* Brahms.

Leonard Slatkin, associate principal conductor of the Saint Louis Symphony Orchestra beginning with the 1974-1975 season, has become one of the most sought-after young conductors in the country, appearing with such major ensembles as the New York Philharmonic, Chicago Symphony, Los Angeles Philharmonic and Minnesota Orchestra. Rave reviews for his four concerts with the New York Philharmonic in January, 1974 brought an invitation to conduct the new York ensemble on its Florida tour; however he was unable to accept due to a prior commitment to record music from the film "The Exorcist" with the BBC Orchestra in England.

The young conductor began his musical studies as a child in a household in which music-making was a constant activity. His father, the late Felix Slatkin, was a celebrated conductor and violinist, and a member of the Saint Louis Symphony violin section for several years, and his mother is a renowned cellist. Mr. Slatkin studied conducting with his father, with Jean Morel at the Juilliard School, and with Walter Susskind at Aspen.

Mr. Slatkin began his professional career as a pianist, playing numerous recitals with his brother, a cellist. He made his conducting debut in Carnegie Hall when he was 22, performing with the Youth Symphony Orchestra of New York. In 1968, he came to St. Louis at Maestro Susskind's invitation as assistant conductor; he was named associate conductor in the fall of 1971.

Admission, at gate only, is $2.50 for adults; $1.50 for children. Please bring a blanket or chair. This concert is supported, in part, by a grant from the National Endowment for the Arts. □

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Lorine H. Compton, Editor

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$5.00 per year. $6.00 foreign.

Gardening in St. Louis

GARDENING IN MAY

The spring rush of garden chores the past month is beginning to let up and gardeners are moving into the more routine tasks of summer. The rewards of earlier planning and planting are now apparent and mistakes or errors in judgment are revealed.

Keep a notebook and keep it up to date. This is the time to enter in it your evaluation of the garden results attained this spring, with notes on changes or improvements. Make a note of those special bulbs or plants you noticed in the Garden (MBG), or friends' gardens, that you wish to add to yours next fall.

Spring flowering bulbs should not have the foliage removed until the leaves start to turn yellow, usually 5-6 weeks after flowering has stopped. If foliage is removed too early, little or no flowering will occur next year.

Remove spent blooms on roses and other perennials; if allowed to produce seed, the plants suffer and become weak. Some perennials such as arabis, candytuft, alyssum and early phlox, need to be trimmed back hard after flowering to prevent the plants from becoming leggy.

Continue to plant annuals in the garden for summer long color and cutting. Select healthy, sturdy plants, water in well when setting out and, if necessary, protect from hot sun for first day or two. Good annuals for hot, dry areas are California poppies, gazanias, African daisies (several types), portulacas, gerberas. Plants for shaded areas are impatiens, coleus, fibrous begonias and caladiums. Prepare soil well by adding lots of humus in the form of compost, rotted manure, or peat moss, and 5 lbs. bonemeal per 100 square feet.

House plants can now be moved outdoors for the summer. Repot first if necessary and cut back to encourage new, sturdy growth.

Chrysanthemums can now be divided, or new cuttings made and reset for the best effects in the fall. Pinch back to encourage good breaks and to help control growth.

Prune back forsythias and other shrubs which have finished flowering, to shape the plants up and control the size. Remember these plants form their flower buds in the summer. Leggy azaleas and rhododendrons need to be pruned back also. If fertilizer was not applied earlier to these shrubs, do so now with cottonseed meal and bonemeal. Work in lightly and apply more mulch around the shrubs to control moisture and weeds.

Early vegetables are now ready for harvesting and second sowing can be made as space is available. Set out tomatoes and stake to conserve space. Mulch applied helps to control weeds and moisture.

Water the garden early in the day, if possible. Water heavily so that each area receives the equivalent of 1-2 inches of water every 10 to 14 days. Avoid light waterings every day or so, as this tends to bring the roots to the surface, causing plants to suffer and even die.

Grass should not be cut closer than 2-2½ inches in the warmer weather. This allows the plants to manufacture food in sufficient quantities to continue in good health, and also prevents weed seed that needs light for germinating.

Inspect plants regularly to see that insects and disease do not become problems. Rogue out weak or diseased plants. Use sprays early in the morning and when there is little or no wind to cause drifting. Safe sprays are Rotenone, pyrethrum and, if necessary, Malathion, but follow the directions on the labels carefully.

Control weeds in early May, a good time to concentrate on elimination of weeds in lawn areas that were reseeded in late March. Identify types of weeds and select the herbicide recommended for specific control of each type. If crabgrass pre-emerge was not used in April and crabgrass is beginning to grow, it can be eliminated by the use of a herbicide recommended for crabgrass in active growth which should be applied from late May on.

The home greenhouse is now nearly empty since most plants have been moved outdoors. Clean all benches and floors thoroughly. Apply extra shade if necessary and watch watering to prevent drying out. Give as much ventilation as possible, day and night. If plants have been grown in benches, remove all old soil and prepare with fresh. Large plants such as citrus and others may need some pruning to control growth and improve the plants. Continue to feed at regular intervals with liquid fertilizer. ☐

GROWING BETTER ROSES, **by Fred J. Nisbet. 244 pp. Illus., 1974. Alfred A. Knopf, Inc. $8.95.**

By the incorporation of many up-to-date techniques, Dr. Nisbet has produced a most readable and informative book which should enable the serious gardner to produce better roses.

Dr. Nisbet held a variety of horticultural positions, including an assistant professorship at West Virginia University and publications editor for the American Rose Society. All the basic cultural operations are covered, particular reference being given to differing practices under differing climatic conditions — the information relating to parts of the country which experience severe cold during the winter months is especially valuable to our area. It is extremely helpful to have available up-to-date advice on such topics as pruning, mulching, and pest and disease control.

Major portions of the book deal with the various classes or groups of roses. Other chapters deal with important topics often overlooked in such publications: sound advice is given on the initial purchase of good quality plant material and what constitutes such, while fertilizer treatments are very much updated, and a short chapter gives advice on tools useful in rose cultivation. References to the important work of the American Rose Society provides the book with authorative standing.

An excellent appendix has sections dealing with national rose organizations, dependable sources of plants and materials required by the amateur grower, rose recipes, and a state by state list of rose display and test gardens. Reference is made in this section to the Missouri Botanical Garden, which functions as both a display and test garden. A useful bibliography is also included. ☐

ROSES

With the completion of the extended south Rose Garden, it seems fitting to reprint this column on growing roses in St. Louis, written by Alfred Saxdal, rose grower for the Garden.

The rose is a lovely lady, and if you are kind and attentive to her, she will fill your garden with a generous abundance of color and form.

Remember, she is a fairly hungry plant and regular feedings will stimulate growth and make her bloom. But don't overdo it; three feedings of a good, balanced rose food a year should be enough, or perhaps a light feeding once a month. A good plan is to consult the recommendation of the manufacturer, which is printed on the container.

To keep her free from pests and diseases, a regular spray program is best, say every two weeks with Phaltan or Manzate for blackspot, and Benlate for mildew, being sure to cover the plant – especially the underside of the leaves.

Roses require a lot of moisture, and in dry weather a weekly soaking is recommended. Morning is the best time for watering. This gives the foliage all day to dry off, discouraging disease. Most rose literature advocates some method of watering to keep water off the leaves. However, if you do water leaves and all, follow up with a spray of Phaltan or Manzate and Benlate.

Since the chief function of a rose is to beautify, keep her neat and trim by regular pruning. This is done by cutting off all faded flowers, and if it is a husky plant, cut just above a five-leaf cluster of leaves. If it is a rather weak or new plant, do not cut away any more wood than necessary, even if you cut to a three-leaf cluster, or just the faded bloom. Of course, sucker shoots that come from below the bud union must be removed.

Deep cultivation of roses should be done only in early spring, but to avoid hard or packed soil, cultivate shallowly for the rest of the season.

To discourage cane borers, which are active the entire growing season, seal ends of canes after pruning with pure orange shellac or cane sealer.

One of the real secrets of rose growing is sunshine. Roses must have a half-dozen hours of sunshine in the early part of the day and shade from the hot afternoon sun.

It has been said if you pick a spot where you would be comfortable sitting out all day and plant a rose there, you will keep this lovely queen of the garden happy and blooming.

Mulching is an important item for the rose grower to consider, for not only does it discourage weeds, but it conserves moisture in the soil and helps keep the root area cool. For this purpose, ground corn cobs are excellent as they are least expensive and do an adequate job of holding moisture in the soil. Our preference, however, is old cow or horse manure, which adds humus to soil that roses need. Grass clippings may also be used.

One of the most troublesome rose pests is the red spider mite. These tiny creatures, pinkish when young and yellow or green when mature, pierce rose foliage and suck, leaving a webby deposit on the underside of leaves. The mites themselves are all but invisible with the naked eye. A bad infestation may cause defoliation. Our advice is to assume they are there in early spring and spray with Kelthane,May 25, being certain to get to the underside of the leaves, otherwise your efforts will be of little avail.

Do not get excited about a few aphids unless 50% or more of your plants are affected. Leave them to the ladybugs, who regard them as choice food. If they become too numerous, a generous spraying of Malathion will put an end to their career. ☐

A native of Denmark, Mr. Saxdal studied at the State Horticultural Experimental Station, Hornum, Denmark. He came to the United States in 1927, and to the Garden in 1963. His greatest ambition is for our Garden to have the very best rose gardens in the United States.

Come to the rose gardens this May. Watch Mr. Saxdal at work, and study and observe. Try his methods in your garden. ☐

Mrs. Landon Y. Jones

MRS. LANDON Y. JONES – *MEMBERSHIP*

At the May 6th meeting of the Executive Board of the Members of the Missouri Botanical Garden, Mrs. Landon Y. Jones, president for the past two years, will retire from office and Mrs. Dwight Coultas will begin her term.

The *Bulletin* asked Mrs. Jones if she would talk about some of the things that had happened at the Garden during her two years as president of the Members. She told us, first of all, that the outstanding feature of those particularly innovative two years had been a growing feeling of excitement and accomplishment among the members of her board as they worked closely with the Director and the Assistant Director. Dr. Raven had, she remembered, been at the Garden for just over a year when she unexpectedly assumed the presidency from Mrs. G. Carroll Stribling, Sr., who resigned due to illness. Dr. Klein had arrived even more recently.

Perhaps the most significant indication of that involvement and expansion has been the large increase in the number of Members. In the last year alone, the Membership has increased by almost 1,000 and the board has, this spring, given extended emphasis to the continuing drive for new members. Under the chairmanship of Mrs. Robert Kittner, a series of coffees, given at the homes of members, was organized to introduce prospective new members to the many aspects of the Missouri Botanical Garden.

It is no wonder that the Membership has increased, for, under the leadership of Mrs. Jones and her board, the traditions of the Garden have been carefully preserved while a great many new opportunities have been opened to Garden members. The traditional flower show previews have long been popular and recent ones have been spectacular. Mrs. Jones remembers the Christmas show in 1972 when she and Mrs. Malcolm Holekamp spent hours wrapping hundreds of miniature pine trees chosen as gifts for the children. The St. Louis Zoo was co-host at that preview and a number of animals joined the children as guests. At the 1973 spring preview, under the chairmanship of Mrs. John Wagner, invitations were sent to several hundred prospective members in addition to those sent to the Membership and the turnout was a record one. Both the 1973 Chrysanthemum show (Mrs. A. Lee Shapleigh, chairman) and the 1974 Orchid show (Mrs. William Knowles, chairman) were the biggest and most beautiful in the Garden's history and the 1974 Spring preview brought out another record attendance of members.

The annual Flower Sunday at Christ Church Cathedral was expanded this year under the direction of Mrs. Dwight Coultas to include a two day Flower Festival at the Cathedral modeled on English village church flower fairs, with booths and displays inside and outside.

Mrs. Jones explained that English gardens and flowers are especially important this year at the MBG. The first Members' tour of English gardens and of the Chelsea Flower Show is being offered this month. Subscribing Members will be accompanied by Londoner, John Elsley of the Horticultural Staff, and by Dr. and Mrs. Peter Raven. And, in September, the second Garden benefit Ball will take as its theme the English Garden, a theme particularly fitting as the Garden's founder, Henry Shaw, was an Englishman whose heritage influenced his Missouri Garden in many ways. Mrs. John Brodhead will act as chairman of the benefit and Mrs. Charles Limberg as co-chairman.

Mrs. Jones said that perhaps the most rewarding involvement of her term was the first benefit, held in September 1973. The benefit committee, under the direction of Mrs. Sanford N. McDonnell, chairman, and Mrs. A. Timon Primm, III, co-chairman, worked all summer long to make the party the enormous success it was. Sponsored by Stix, Baer and Fuller, the event had a Japanese theme and raised funds for the construction of a Japanese Garden, the architectural design for which was donated to the Garden by the Japanese-American Citizens League. Mrs. Jones wished to again express thanks, not only to Stix, Baer and Fuller, but to the Union Electric, Laclede Gas, Monsanto and Falstaff companies, all of which made contributions. Her most special thanks were reserved for those members whose long, hard work on invitations (Mrs. Richard Nelson), patrons (Mrs. Edwin S. Jones and Mrs. Maurice Chambers), table decorations (Mrs. Mahlon Wallace, III, and the St. Louis Ikebana Society) and seating (Mrs. Monte

Throdahl and Mrs. Oliver Langenberg) established a model of perfection which all future Garden benefits will follow.

Mrs. Jones also spoke of another aspect of her job which is less visible to the members at large — the many branches of administration at the Garden and their co-operation and interinvolvement with the Membership. She pointed out that she has been the first President of the Executive Board of the Members of the Missouri Botanical Garden to attend the monthly meetings of the Board of Trustees; the Trustees have expressed great interest in the members and their activities. In addition, Mrs. Jones, as the board president, regularly attends the meetings of the Historical Committee, whose chairman (now Mrs. Charles Lamy) has an automatic seat on the members' board. And finally, Mrs. Jones mentioned the liaison between the Missouri Botanical Garden and the Federated Garden Clubs. Two members of the Federated Garden Clubs regularly attend the meetings of the Garden members' board. This, she feels, brings the Garden into much closer contact with local garden clubs all over Missouri.

Wanting to make sure she had covered everything accomplished by her board and by individual members during the last two activity filled years, Mrs. Jones gave a quick look through her diary and exclaimed, "Oh, I've forgotten to mention:

— The newly established series of evening lectures on botanical subjects for members.

— The new members' lounge in the Administration Building, decorated by Mrs. George Whitelaw.

— The selection of the board's honorary member, Mrs. John S. Lehmann in 1973 as the *Globe Democrat's* Woman of the Year for "her achievement in creative philanthropy."

— The first University Weekend at the Garden in May 1973 to which students and faculty of all St. Louis universities were invited and for which the Garden held seminars, tours, lectures, and special displays including one of horticultural books set up in the old Museum Building by Mrs. John S. Skinner.

Anything more? "Probably," sighed Mrs. Jones, smiling. "It's been a very busy two years." □

'CAMERA DAY" AT THE GARDEN

The Missouri Botanical Garden in cooperation with the Eastman Kodak Company is staging a "Camera Day" on June 1st, 1974. The Garden will be in full bloom that day and all camera enthusiasts are invited o tour the Garden and capture on film our blooming loral displays.

The Garden will have available for consultation Mr. Arthur Witman a highly renowned and respected photographer, now retired from the Post-Dispatch; he will advise you of film and camera setting and scenes. □

Dr. John Kokwaro, of Nairobi University in Kenya studying plant specimens in the Garden's Herbarium.

MISSOURI BOTANICAL GARDEN NORTH AMERICAN CENTER FOR AFRICAN PLANTS

In 1968 a call for a coordinated program in North America with respect to the African flora was made in international botanical circles. Having by then a quite large African collection, Missouri Botanical Garden took up the challenge and with the agreement of the major herbaria in the U.S. which also had sizeable African holdings, Missouri Botanical Garden became recognized as the major center in North America for the study and housing of African plants.

The Garden then embarked on an active program to obtain African plant collections. As a result, our African collections have grown rapidly, and the African program is beginning to gain international recognition. Our collections are now being borrowed for study by more and more experts on the African flora, while overseas scientists also are visiting the herbarium and taking away excellent reports not only of our modern herbarium facilities, but also of the quality of our African collection.

Recently, Dr. John Kokwaro, a lecturer at the botany department at Nairobi University in Kenya, visited the Garden while on a study tour of the United States. His visit here was a direct result of our expanded efforts on the African flora. Dr. Kokwaro, who is an expert on medicinal plants of East Africa and has contributed several treatments to the Flora of Tropical East Africa, much admired our herbarium and commented extremely favorably on our collection of African plants which he rated the best he had seen in the United States. □

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
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Missouri
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Bulletin

GEORGE H. PRING 1885 - 1974

George H. Pring, a member of the staff of the Garden for fifty-seven years, and superintendent for thirty-five years, from 1928 until 1963, died May 9, 1974, in West Chester, Pennsylvania, at the age of 88. Mr. Pring came to the Missouri Botanical Garden in 1906, as foreman of the orchid department.

Born in 1885 in Devonshire, he had just come from Kew, one of many "Kewites" whose training in horticulture had prepared them for careers all over the world. "Trained at Kew" meant the best possible education in horticulture in the early 1900's, and George Pring had been well trained. At 20, he was the youngest person to graduate from the famous Queen's School of the Royal Botanic Gardens at Kew. At the age of 14 he won a scholarship to work there as garden boy, sweeping walks and washing pots and waiting until the time when he could become a regular student. No one was allowed to enter Kew before the age of 21, but "Young George," as he was called, took the hardest examinations given at the school – physics and chemistry – to show he could do the work even though he was only 19. No one had given him permission to take the tests; so he was worried when he was called up before the supervisor, who had been informed that the garden boy had not only taken the exams, but had passed them with good marks.

Instead of the reprimand he was expecting, the boy was told that in his case an exception to the usual admittance rules was being made, that he was to be considered a regular student from that moment on. When he graduated from Kew the following year, he was still younger than any incoming student was supposed to be.

Mr. Pring, as he was now called, wanted to work for the Missouri Botanical Garden, which because of the St. Louis World's Fair was becoming known in London. He got the job as foreman in charge of orchids and exotic plants, and came to St. Louis.

He returned to Kew in 1907. During the trip across the Atlantic he met Isabelle McAdie, who was returning with her grandmother to England to visit relatives. The boat romance led to marriage in 1910, and Mr. and Mrs. Pring returned to St. Louis. They had four children: George, Charles, Bradford, and Isabelle. George and Charles both are horticulturists, and Isabelle is married to Dr. Russell Seibert, Director of Longwood Gardens. All three sons saw service during the Second World War, and Bradford was killed in the crash of a bomber in 1948, having flown 32 missions over Germany.

Mr. Pring was intensely interested in orchids throughout his career. When he came to the Garden, the orchid collection was quite small. Through his efforts a noted plantsman in Kirkwood, Missouri, Mr. D. S. Brown, donated a large collection of orchids, palms and cycads to the Garden in April, 1918, and in the fall Mr. Brown decided to donate all of his cypripediums and selenipediums to the collection. Because of the generosity of Mr. Brown the Garden now had 1235 species and varieties making a total of 5732 plants.

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With the large collection of orchids at the Garden Mr. Pring had excellent plants with which to stage exhibits in orchid shows. He took fifty-six species of botanical orchids to the first exhibition of The American Orchid Society in Horticultural Hall, Boston, May 8-11, 1924. This exhibit received a silver cup and a silver medal for a set of colored photographs illustrating Mr. Pring's collecting trip to South America. For the Garden's exhibit at the National Orchid Show in Madison Square Garden, May 10-12, 1928, a silver medal was given for a collection of cypripediums, a gold medal for Nepenthes, a gold medal for an exhibit of "Growing orchids from Seed" and a special gold medal for this same exhibit for its highest educational value. Again on October 16, 1930, in Washington, D.C., at the Fourth National Show of the American Orchid Society, the first prize, Mrs. F. E. Dixon's silver cup, was awarded for the exhibit illustrating the development of orchids from seed.

Mr. Pring frequently was a judge at the orchid shows held in various cities and was a Trustee of The American Orchid Society from 1948 to 1956, on the Research Committee to 1958 and thereafter Honorary Vice-President.

Though Mr. Pring began his work at the Garden as an orchid specialist, in 1914 he turned to breeding water lilies as well. He gave two reasons for his switch from orchids to lilies: first, to grow lilies from seed to bloom takes only a year, but an orchid takes seven years, hybrid lilies can thus be produced sooner; second, there were few if any horticulturists working with tropical lilies, and they provided a challenging field for experimentation.

He introduced the day-blooming Whitaker Strain from Africa, for which he received the National Gardeners Association Gold Medal in 1920. Other hybrids and more awards followed in quick succession. The first white hybrid day-blooming lily, "Mrs. George H. Pring," and the pink lily "General Pershing" brought awards in 1922 and 1923, but Pring's greatest discovery was the introduction of the Lost Yellow Lily from Africa. The famous "St. Louis" lily, the first yellow day-blooming hybrid, was a cross between the Lost Yellow Lily and the day-blooming "Mrs. G. H. Pring." "St. Louis" is the only lily of Garden creation that was granted a U.S. patent.

Some gardeners kept asking Pring why he couldn't develop lilies for small pools. After studying lilies from all over the world at the Kew Herbarium with an English collaborator, Mr. Bob Trickett, he obtained seeds of two pygmy lilies from Africa and began germinating hybrids. Two famous yellow lilies, "Aviator Pring" and "St. Louis Gold," resulted from these experiments. The final introduction which has satisfied home gardeners is the pygmy waterlily "Joanne Pring," which can be grown in a half barrel.

It was in 1928 that Mr. Pring was appointed Superintendent of the Garden, but the addition of supervisory duties did not keep him from continuing research on orchids and lilies.

George Pring was in constant demand as a speaker, locally and throughout the country, his most popular subjects being "Orchid Hunting in Central and South America," "Orchids," "The Activities of the Missouri Botanical Garden," and "Water-lilies and Water Gardens."

Mr. Pring traveled extensively. In 1925 he attended the International Flower Show in Haarlem and the Chelsea Show in London. On his return to the United States he brought botanical orchids from Kew and Dublin and orchids purchased from commercial growers in England. In 1948 Mr. Pring spent the summer in England, visited flower shows and did research on the introduction of new species of nymphaeas for plant breeding purposes. Mr. Pring sailed for England, May 8, 1951, for the annual meeting of the Kew Guild of which he was the first American President. He also attended the Flower Show of the Royal Horticultural Society at Chelsea and spent time in the Kew Herbarium studying specimens of nymphaeas for breeding work on water-lilies which resulted in the introduction of two new pygmy water-lilies.

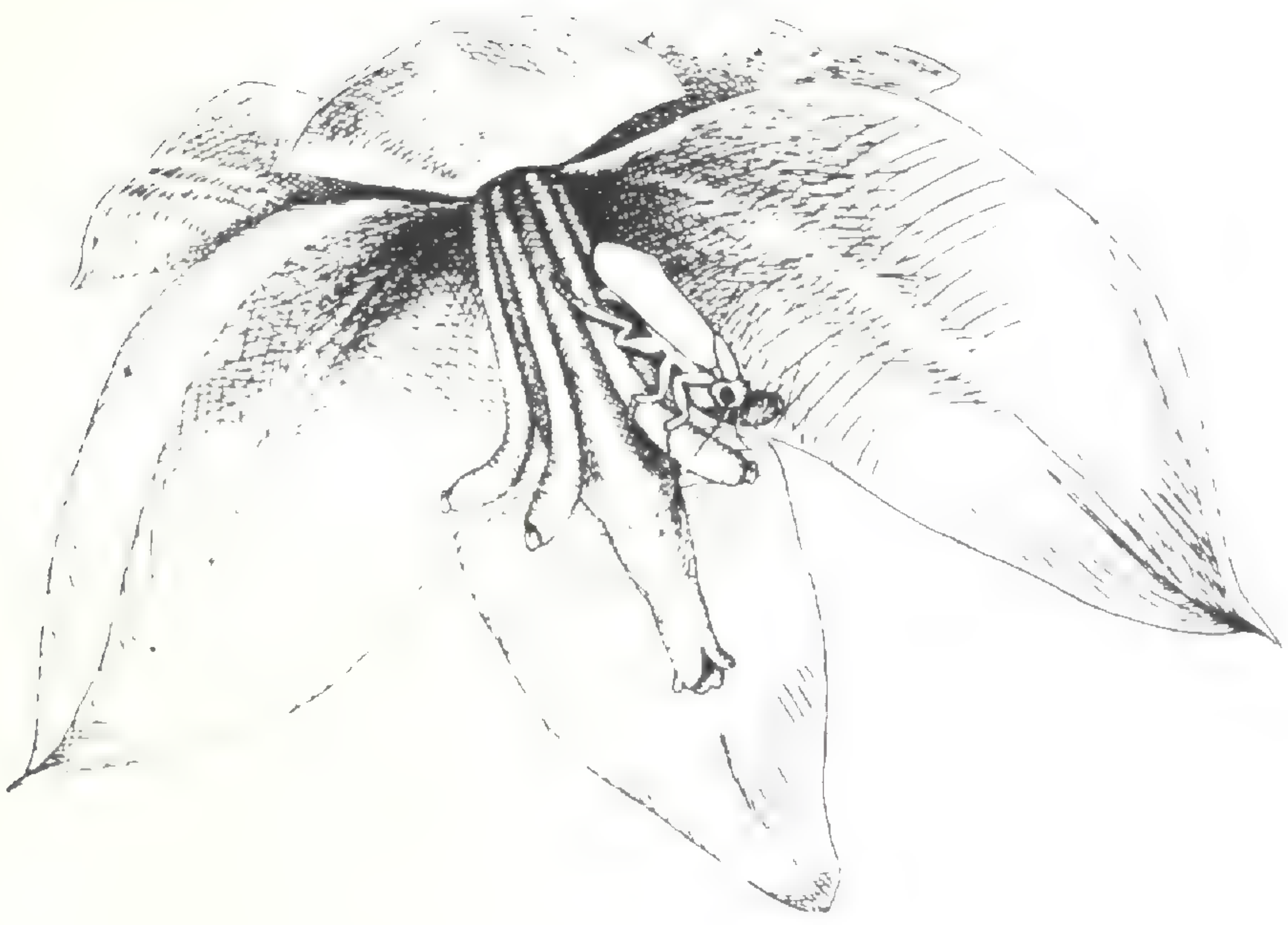
As a horticultural writer Mr. Pring's articles have appeared in the *Missouri Botanical Garden Bulletin, Aquatic Life, American Orchid Society Bulletin, Flower Grower, Gardeners' Chronicle of America, Horticulture, Ladies Home Journal* and *New York Times.*

In 1940 Mr. Pring was awarded the Thomas Rowland medal of the Massachusetts Horticultural Society, in recognition of his success in producing tropical water-lilies.

Mr. Pring was President of the St. Louis Horticultural Society for many years and held offices in various florists and gardeners associations. He served as judge in numerous flower shows and served on committees for the staging of flower shows in the Arena in the 1930's and 1940's and elsewhere.

Upon his retirement in December, 1962, Mr. Pring was appointed Superintendent Emeritus, in grateful recognition of his distinguished career devoted to botany and the arts of horticulture, by the Board of Trustees of the Missouri Botanical Garden.

After the death of his wife in 1969, he moved to West Chester to live with his daughter and son-in-law. Contributions in Mr. Pring's memory may be made to the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. □



YUCCA PLANTS IN ST. LOUIS

June is the time when the beautiful cream-colored flowers of *Yucca smalliana* appear in the St. Louis area. This showy plant, sometimes known as Adam's needle, is not only a welcome sight in gardens and parks but part of a fascinating relationship between plants and insects — a story originally discovered at the Missouri Botanical Garden.

Dr. George Engelmann, a famous botanist who was Henry Shaw's personal friend and scientific advisor, was the American authority on yuccas. His observations convinced him that insects must be necessary for the pollination of the yuccas, since the plants were unable to produce seed when insects were kept from entering the flowers. In the 1870's, a Dr. C. V. Riley was head of the Missouri State Entomology Office, located in St. Louis, and Engelmann called Riley's attention to the insect visitors of yuccas.

Thus began more than twenty years of careful observations on yucca pollination by Riley, Engelmann and the former Director of the Garden, William Trelease. Riley presented his first discoveries at the 1872 meeting of the American Association for the Advancement of Science, where they caused a great sensation, for it was the first public report on the almost incredible story of the pronuba moth.

Just before the yuccas bloom, a small white moth known as *Tegeticula yuccasella* (Riley had named it *Pronuba yuccasella)* appears. The moths are evidently attracted to the flowers by their fragrance, and they live and mate in the large blossoms, which, being white like the moths, give them protection by camouflage. When the female moth is ready to lay her eggs, she goes to the anthers of the yucca flower and scrapes pollen from them with special structures on her tongue and around her mouth, carefully forming the pollen into a compact, sticky ball. When the pollen load is large enough and firmly packed under her head, the female moth stands on the pistil of the flower and lays an egg. To do this, she inserts the ovipositor, a special structure for placing the egg, into the ovary, or developing seed pod, of the yucca. Immediately after laying the egg, the moth goes to the opening at the top of the flower's stigma and vigorously stuffs in the pollen ball she has collected. She repeats this process for each egg laid.

By this behavior, the pronuba moth has not only placed her offspring where their food is found, she has insured that seeds will develop for them to feed on by pollinating the yucca flower. The larvae hatch out within the seed pod, feeding on the developing seeds. When they are ready to pupate, the larvae chew through the wall of the pod and drop to the ground. They then burrow into the soil and develop into adult moths, ready to emerge when the yuccas bloom the following June. The pronuba moth has insured by her special behavior that many more yucca seeds will be formed than her offspring need for food, so the plant has benefited by feeding the moths.

It is common for insects to accidentally transfer pollen when they seek nectar in flowers. But the female moth receives nothing from her pollination activities; she is actually causing food to be manufactured for her young. The yuccas and the pronuba moths are completely dependent on one another for the perpetuation of their species, for although many other insects visit the yucca flower, none effectively transfer pollen from anther to stigma.

When Dr. Riley made his report and published his remarkable account in the 1872 Transactions of the St. Louis Academy of Science, amazement and controversy prevailed in the scientific community. Others attempted to refute his work, but Riley and his co-workers were found to be correct.

You can watch the pollination behavior of the yucca moth yourself some June evening, if you have a flashlight. And the next time you spend a day at the Garden, visit the monument in the Knolls area honoring the yucca collection and Dr. Pope, donor of the first yuccas to the Missouri Botanical Garden, where this fascinating story was first discovered. ☐

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Lorine H. Compton, Editor

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Gardening in St. Louis

GARDENING IN JUNE

This spring almost everyone's garden suffered, at least to some extent, from the severe freeze in late March which hit after growth was well advanced. The cold spell caused, in many areas, partial freeze back, delaying flowers on roses and, in some cases, even freezing flower buds and leaves.

However, due to the cool, moist weather since, **grass** has flourished and lawns that have been well fertilized are extra lush. It is still not too late to control and eradicate weeds. Cut lawns to a height of 2½ inches – no closer – to insure good growth through the summer. On newly established lawns, light application of fertilizer low in nitrogen is highly desirable now. The application should occur when the grass is dry and preferably just before a rain, or you may water it in immediately after applying.

Roses will benefit, (as well as many other plants) from a feeding of liquid fertilizer to encourage better growth and flowering. In watering, make sure plants receive the equivalent of two inches of rain. Roses keep best if cut in late afternoon and plunged at once into warm water. Place container in a cool spot for a couple of hours before arranging.

Continue to set out **annuals** where color is needed. Shade from hot sun for the first few days. Portulaca is a good, old-fashioned, low-growing flower for quick results in a hot, exposed situation. Sow seed now. Other flowering annuals highly suited to sunny areas are California poppies, baby's breath, cleome and spider plant.

Perennials may be started now from seed in the cold frame for setting out in the garden early in September.

Window boxes and **container grown plants** need to be kept moist at all times and fed regularly with liquid fertilizer for best results.

In difficult, **shaded areas** of the garden, plants such as fancy leafed caladiums, coleus, fibrous begonias and others are ideal and, in fact, apt to do much better in shade than in sun. Sometimes, by means of selective pruning in shaded areas, filtered sunlight can be introduced in order to enlarge the area being planted for color.

Softwood cuttings are readily made this month. Cuttings 6-10 inches long of boxwood, privet, euonymus, weigela, yews and others are excellent. Place the cuttings in a mixture of perlite and peat in covered plastic trays. Keep in cool, shaded areas and see that they are moist at all times. Rooting hormone is helpful in speeding rooting.

Most **evergreens** can be pruned this month. Prune to retain the natural look wherever possible. If it is necessary to cut back the leaders of evergreen trees to control height and encourage the plant to bush, this work should be done at this season, when the wood is soft, green and watery. It should never be attempted when the wood is stiff and hard. At least an inch should be left for the setting of a new bud.

Continue to **prune** spring flowering shrubs that have not yet been done, remembering that the flower buds for next spring are produced in the current season's growth. Plants in this category are spireas, viburnums, deutzias and weigelas. Prune Japanese quince less than the others.

Second sowing of many vegetables can be made late this month for late crops of beans, beets, carrots, corn and turnips.

Watch for **spider mites** in roses and evergreens. Spray with Kelthane, according to directions, and use Benlate to control mildew.

Keep your garden notebook up to date to record changes needed in the garden that cannot be made until fall or next spring.

The new annual introductions for 1974 and 1975 are now on display at the Garden, and are worth periodic visits to watch their development. ☐

NEW HOLLY PLANTINGS

The Missouri Botanical Garden is one of the nineteen institutions in the United States designated as an official Holly Arboretum by the Trustees of the Holly Society of America. Recently, our holly collection has been expanded by new plantings situated between the Museum and Administration Buildings on the east boundary of the Garden.

These plantings have been made possible through a tribute fund established by Mrs. Falls Bacon Hershey of St. Louis in memory of her mother, Mrs. Charles B. Elder. Mrs. Elder was at one time State President of the Nature Conservancy and was instrumental in procurring for the conservancy 80 acres of land at Dexter, Missouri, which included the last remaining natural stand of the American Holly in the state.

All the new plant material was made available to the Garden through the generosity of Mr. J. Bon Hartline of Anna, Illinois, an expert nurseryman specializing in the production and introduction of hollies in the Midwest.

There are about 400 holly species distributed throughout the temperate and tropical regions of both hemispheres. Hollies naturally display considerable diversity in form or habit, low shrubs contrasting with large trees, the foliage being evergreen or deciduous, while individually the leaves exhibit a wide range of size, shape, color and degree of spininess. The evergreen species are particularly valuable as they are often tolerant of a polluted atmosphere, while many of the deciduous species are valuable because of their fruiting potential. Male and female flowers are born usually on separate plants, and thus it is often important for both sexes to be present to ensure fruit production. Although showing a preference for a moist, loamy, neutral to acid soil, hollies are generally remarkably adaptable in their cultivation needs, but it is advisable to avoid heavily shaded situations as they require plenty of light to develop into well furnished specimens. Generally, they are also relatively resistant to attacks by pests and diseases although many species are prone to damage by the Holly Leaf Miner, an insect which tunnels below the leaf surface causing the leaves to assume an ugly pale, puckered upper surface. Spring application of the systemic insecticide Cygon will, however, control this pest.

Our new plantings include many cultivars of the American Holly, *Ilex opaca,* an evergreen species native throughout the eastern and central States. Many hundred of different cultivars of this species exist and more are cultivated in North America than elsewhere in the world. In England, it tends not to produce its red fruits as freely as it does in North America — several yellow-fruited forms are also available. The foliage of *Ilex opaca* is often used as a Christmas decoration, but the English holly, *I. aquifolium,* tends to be utilized more for this purpose. The English holly is an excellent garden subject in many parts of the States but is, unfortunately, not reliably hardy in our area, although several excellent hybrids of this species should prove hardy. *I.* 'Nellie R. Stevens' *(I. aquifolium* x *cornuta)* is one such hybrid included in our collection. The American Holly produces very hard wood which is utilized in furniture production, black and white inlay decoration on musical instruments and when stained black is used for making black piano keys. Boiled leaves of this species served as a substitute for tea during the Civil War.

The Horned Holly, *I. cornuta,* from China and Korea is a slow growing evergreen eventually forming a specimen with a compact habit. It produces attractive rectangular-shaped leaves bearing a prominent spine at each corner. *Ilex cornuta* 'Burfordii' is a handsome free fruiting American cultivar with leaves that only produce a single terminal spine. Many cultivars of the small leaved evergreen, *I. crenata,* from Japan and Korea are available in the trade. One of the most popular is *I. crenata* 'Convexa' (Syn. *I. crenata* 'Bullata Convexa') which forms a dense bush with convex glossy leaves, while the cultivars 'Helleri' and 'Red Lion' develop into low growing plants ideal for utilization as ground cover subjects. The deciduous Possamhaw Holly, *I. decidua,* is a native species from the southeastern and central States whose persistant scarlet fruits contrast vividly to its grey branches throughout the winter months. Several of Mr. Hartine's own selections of this species are included in our collection. ☐

THE RAINBOW GARDEN FOR CHILDREN

Planting of the Rainbow Garden for children, located just west of the new Rose Garden, was completed at the end of last month. The garden was first planted last year as a joint project by the Missouri Botanical Garden and the St. Louis Association for Retarded Children. It is designed especially to appeal to the color consciousness of all young children and, as its name indicates, includes flowers representing all the colors of the rainbow. Its purpose, as Dr. Raven noted at the 1973 dedication of the garden, is to give children "an experience to promote the wonders of nature . . . as the project expands, we hope to provide larger facilities so children can come and learn."

Flowers blooming in the Rainbow Garden this year include marigolds, ageratum, salvias, and petunias with annual trailing vines in the background on wooden trellises. An appropriate sign is shortly to be placed in front of the garden in order to clearly identify it for all visiting children.

The St. Louis Association for Retarded Children, which makes a generous annual contribution to ensure the continuation and expansion of the Rainbow Garden, is currently involved in a drive to extend their membership. We at Shaw's garden are grateful to the Association for helping us maintain this very popular feature and we urge your consideration of their efforts towards the welfare of retarded children in our city. ☐

PLANT DISEASE CLINIC

A special one day plant disease clinic will be held at the Missouri Botanical Garden on Wednesday, June 12, from 9:30 a.m. until 4:00 p.m., in the auditorium of the John S. Lehmann Building.

The morning meeting will be devoted to discussion of all types of diseases including bacteria, fungus, nematodes and viruses. The discussion will be led by Dr. Robert Goodman, Director of the Department of Plant Pathology, the University of Missouri at Columbia, along with three of his colleagues — Dr. V. H. Dropkin, Nematologist, Dr. M. S. Brown, Forest Pathologist, and Dr. O. B. Seahgal, Virologist — each of whom will give a brief talk on his particular field. Ample time will be allowed for questions following the discussions.

The afternoon session will be a comprehensive plant clinic. All attending may bring plants, or portions of diseased plants, for diagnoses. At this session time will be allowed for discussion of general growing and cultural problems.

The fee for the clinic is $1 for Members of the Garden, and $2.50 (which includes the gate fee) to the public. Those attending may purchase lunch at the Garden's Snack Bar in the Floral Display House, or bring their own sack lunches. ☐

PITZMAN SUMMER NATURE STUDY PROGRAM

The first of eight sections of the Garden's Pitzman Summer Nature Study Program will open June 17th. The Program, planned and taught by professional educators offers children of the St. Louis metropolitan area, between the ages of 7 and 15, an exciting opportunity to learn about their environment on a first-hand basis.

Each two-week section of the Program is divided into two parts – five days (from 10:30 a.m.-3:00 p.m., Monday through Friday) at the Missouri Botanical Garden and five days at its Arboretum and Nature Reserve at Gray Summit, Missouri. Children attending the Program will meet in five groups according to their ages so that instruction can be geared to their experience levels. Instructors, working in teams and aided by specially trained assistants, will be assigned to each section and the same team will instruct the children at both the Garden and the Arboretum.

At the Garden, students will visit and study the plant communities represented by the Climatron's jungle-like environment, the arid atmosphere of the Desert House, and the other general Garden planting. Special projects will include the identification of trees and flowers, propagation of plants from cuttings and seeds, bird study with the Audubon Society. The Arboretum, 2200 acres of characteristic Ozark meadows, woods, glades and river flood plain, provides an excellent setting in which to observe and appreciate the complexities of nature through actual exploration and examination.

Eight sections of the Program will be conducted between June 17th and August 16th. The material covered in all sections is identical and the two-week fee of $20.00 includes bus fare to the Arboretum (the bus will pick up and deliver students at the Garden and at the West County Shopping Center). Applications must be received with fee two weeks prior to the opening date of the preferred section. Forms, which also provide additional detailed information, may be obtained by calling the Garden, 865-0440. Registrations will be accepted in the order in which they are received.

The Pitzman Summer Nature Study Program, predicated on the premise that to fully appreciate nature one must have a personal experience with it, is partially funded by a grant from the Pitzman Charitable Trust. Over the past seventeen years, the Pitzman Program has exposed thousands of children to the marvels of nature by giving them a personal experience which heightens their awareness of the role man's environment plays in their daily lives.

Make certain to register your child or grandchild today, to insure that they have the opportunity to attend this year's Pitzman Program. □

DEDICATION OF THE GARNEAU ROOM AT TOWER GROVE HOUSE

The newly restored Garneau Room at Tower Grove House was dedicated on Thursday, April 25th. Furnishings for the room and funds for its restoration were donated to the house by four descendants of Mr. and Mrs. Joseph Garneau – Mrs. William M. Bates, Mrs. Joseph L. Werner, Mrs. William Weld, and the late Mrs. J. Garneau Weld.

The Garneau Room, a second story room in the east wing of the house, is furnished with antique Victorian bedroom pieces almost all of which originally furnished bedrooms in the old Garneau home at 15th and Washington. They include a mahogany half canopy bed with matching dresser and wash stand which date from approximately 1860. On the wash stand is a wash bowl set notable for its water lily motif, a design popular in Victorian times. The bed is covered by a Marseilles spread made on a Jacquard loom about 1850. In addition to the mahogany furniture, there is a rosewood side chair with foot stool and a draped table with a typical Victorian "Gone With the Wind" lamp. On the mantel stand Parian figures and a French bronze Rococo candle holder. On the marble-topped dresser are placed small Stratfordshire china pin boxes with a Red Riding Hood design and 1860 statues of Victoria and Albert. Portraits of Mr. and Mrs. Garneau, believed to have been painted about 1860, hang on the wall.

Present at the dedication were twelve family members representing three generations of the descendants of Joseph Garneau and his wife, hostesses and volunteers who work in Tower Grove House, and members of the Historical Committee. We are grateful to all of them for making this beautiful addition to Tower Grove House possible. □

VICTORIAN URN GIVEN IN MEMORY OF JEROME F. KIRCHER

A Victorian cast iron urn, given in memory of Jerome F. Kircher (1895-1969), has been placed in the center of the circular lawn in front of Tower Grove House. The urn, chosen by Mrs. Kircher, was purchased with funds donated to the Garden by Mr. Kircher's friends.

Mr. Kircher, a St. Louis businessman, was, with his wife, active in the restoration of Tower Grove House and was himself looking for an appropriate decoration for its front lawn shortly before his death.

The memorial urn is approximately the age of Tower Grove House, and has been in various St. Louis gardens since its manufacture in the mid 19th century. When it has been permanently anchored to its pedestal and the lawn around it properly terraced, it will be dedicated. The Missouri Botanical Garden is indebted to Mr. Kircher's friends for the thoughtfulness and generosity which has made this particularly lovely addition to the grounds possible. □

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
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**SEPTEMBER
TWENTIETH
6:30 P.M.**

Missouri Botanical Garden Bulletin

**Members' Day at the Garden,
August 1, 10:00 – 3:00,
Luncheon 11:00 – 2:00.
Bring a friend!**

**St. Louis String Quartet,
7:00 p.m., Friday, August 2,
in the South Rose Garden**

SHAPLEIGH MEMORIAL FOUNTAIN DEDICATED

Rose Garden and Fountain Focal Point for Sept. 20th Ball

On September 20, guests at the Missouri Botanical Garden's Second Annual Benefit will enjoy an evenng of dining and dancing amid the South Rose Garden and the Shapleigh Memorial Fountain.

The theme of this year's Benefit, "A Night in an English Garden," will serve to introduce patrons to he new rose garden and fountain. According to the Chairman of the event, Mrs. John Brodhead, Jr., nvitations are now being addressed and will be mailed within the next ten days. Patrons, at $60 per person, are invited to subscribe now.

The Benefit, sponsored again this year by Stix, Baer, and Fuller, will feature several internationally recognized celebrities and the evening promises to be one of the most exciting of this year's social season. Proceeds from the Benefit will make possible further development of the South Rose Garden. Additional members of the Benefit Committee are: Mrs. Charles F. Limberg, Co-Chairman; Mrs. William N. Andrews, Mrs. Frederick O. Hanser, Mrs. Walter W. King, Mrs. William S. Knowles, Mrs. E. E. Masters, Mrs. James S. McDonnell, III, Mrs. Richard T. Nelson, Mrs. Tom K. Smith, Jr., Mrs. Walter G. Stern, Mrs. Mahlon B. Wallace, III, and Mrs. Dwight W. Coultas, President, Membership Missouri Botanical Garden.

Volume LXIII Number 6
July, 1974

ROSE GARDEN AND SHAPLEIGH FOUNTAIN OPENED TO PUBLIC

The construction of the magnificent new South Rose Garden and Shapleigh Fountain is a major step toward the implementation of the Master Plan for the Missouri Botanical Garden. Both of these features were designed by Eugene J. Mackey III Architects, Inc. Wilhelm H. Hantz was the project architect for the fountain and Karl D. Pettit III project architect for the South Rose Garden. Harriet Rodes Bakewell was the landscape consultant for the South Rose Garden.

The Shapleigh Fountain was made possible by contributions from the family and friends of Mr. A. Wessel Shapleigh, who served on the Garden's Board from 1936 to 1957. His son, Warren M. Shapleigh, has been a member of the Board since 1958. The fountain features a circular brick plaza, 50 feet in diameter, with three curtains of water that rise and fall and through which visitors pass to the elevated granite bench in the center. It is southwest of the Climatron and easily visible from the entryway to the Desert House. The fountain serves both as an invitation and entryway to the South Rose Garden.

South from the fountain, the visitor's gaze is carried by the open vista which frames the South Rose Garden. Changes in elevation are gently accentuated by two curving brick walls to form a terrace and the end of the access is punctuated by the Gazebo, a gift from Mrs. John S. Lehmann. The walkway around the Gazebo has been replaced with brick and the fountain in the center has been relined, making the Gazebo a perfect counterpoint to the fountain at the opposite end of the axis.

The oval outline of the South Rose Garden is embraced by weeping cherries and arborvitae. Eventually a series of pools and arbors for climbing roses will be incorporated into the design. Sixty-seven varieties of roses are now blooming and thirty-seven of these represent new additions. Walking among the grass covered paths, the visitors can experience directly the artful creation of the horticulturists and plant breeders who have devoted so much time and effort to the development of these new varieties. The rose beds have been planted under the careful supervision of Al Saxdal, the Garden's rose specialist.

"The Missouri Botanical Garden should be a place where people can come to see the newest and best varieties that are being developed as well as their old favorites. It should also demonstrate the best examples possible of landscape architecture", said Dr. Peter H. Raven, the Garden's Director. The South Rose Garden symbolizes this goal, integrating plant and architectural form into pleasing designs. It stands as visible evidence of this philosophy and our desire to make the Garden an even more varied and wonderful place.

The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

NEW GROUNDS SUPERINTENDENT APPOINTED

Mr. Walter Brian Ward has been appointed Grounds Superintendent for the Missouri Botanical Garden, Dr. Peter H. Raven, Director, has announced. Mr. Ward, born and reared in England, received his horticultural training at the Royal Botanic Gardens, at Kew. He comes to us directly from Hodges Gardens, in Louisiana, where he served as horticulturist. Hodges Gardens, a 4700 acre estate, includes 350 acres of cultivated gardens. Prior to his association with Hodges Gardens, Mr. Ward was assistant superintendent for the Longue-Vue Gardens in New Orleans. He was also senior horticulturist and assistant district superintendent for the Johannesburg Parks and Recreational Department in Johannnesburg, South Africa. Mr. Ward holds a certificate from the Royal Holticultural Society and has completed courses in general horticulture at Texas A & M University.

He succeeds Mr. Albert Saxdal who retires this Fall.

DR. RAVEN ELECTED PRESIDENT OF BOTANICAL SOCIETY

The Missouri Botanical Garden's Director, Dr. Peter H. Raven, was recently honored by members of the Botanical Society of America by being elected president of their society for the coming year. The Botanical Society of America was founded in 1893 and has approximately 4500 members in the United States and abroad. Dr. Raven's election took place during the Society's Annual Meeting at Arizona State University in Tempe.

THE "FLOWER SUNDAY SERMON"

Preached in

CHRIST CHURCH CATHEDRAL

St. Louis, Missouri

Sunday, April 28, 1974

by the Rt. Rev. John E. Hines
Presiding Bishop

Provided for in the
Will of

HENRY SHAW

When Mr. Shaw placed in his will the provision which, annually, has made this "Flower Sunday" possible in this Cathedral, he could not possibly have foreseen the energy crisis which has shaken every man, woman and child — living as we have been under the illusion that we are a part of the most powerful country in the world, one so abundantly blessed with natural resources, and so highly developed technologically that no problem has arisen that we cannot — with reasonable dispatch expect to resolve! Mr. Shaw may have worried about the quality of air over St. Louis — as any one keenly devoted to the life of plants and flowering shrubs — for in those days the exterior walls of this Cathedral, as also the interior walls of the lungs of St. Louisans — were blackened by the pollution caused by the unregulated use of soft-coal energy!

And I'm reasonably certain that Mr. Shaw knew of the Malthusian theory — and the pressing of the growth of the world's population against the food resources of which this earth is capable. But while he likely knew that it took all of human history — some say a million years, others say longer — for Earth's population to rise to a billion persons; now we add another billion in less than fifteen years. And, if we believe the projections — unchecked — this will find 28 billion people on the Earth in less than a century from now. And — later — 500 years later — such an increase could mean a person for every square yard of earth — including the arctic tundra, the deserts, and the mountaintops, too! So that one interpretation of it all could say that — in the language of theological tradition — mankind, while not conspicuously obedient to most of the divine commands, has slavishly carried out the first of them: "Be fruitful and multiply, and fill the earth, and subdue it." (Gen. 1:28)

So, the "population explosion" is in fact a moral problem! Like most moral problems in our contemporary society, it has important scientific and technological aspects. But it is a moral issue because it involves questions of the good of man, of values and conflict of values, of man's self-esteem in relation to the rest of creation, of relations between personal, tribal or national purposes, and the welfare of the human race!

The noted historian, Arnold Toynbee — 85 years old the other day — wrote in the "London Observer" that "the world's future economy will in fact be one of perennial austerity which will become progressively more severe." The reason, of course, is that "Man's plundering of nature now threatens him with pollution and depletion." In order to conserve what natural resources are left, Toynbee asserts, ruthless authoritarian governments will have to impose a regimented way of life. And, not long ago I saw this quotation:

"It has now become a serious necessity to better the breed of the human race. The average citizen is too base for the everyday work of modern civilization. Civilized man has become possessed of vaster powers than in old times for good or ill, but has made no corresponding advance in wits and goodness to enable him to direct his conduct rightly." When was that written? It sounds like yesterday! It was written in 1894 by Sir Francis Galton. Clearly the concerns of the present are not new!

But what Mr. Shaw did recognize — and hoped that somehow — annually — in this Cathedral people would be reminded of it, is that there is a connection between the God we find in Jesus Christ, and the natural order to which mankind looks both for survival and for nurture. That the Psalmist's wisdom, "the earth is the Lord's, and all that is in it" — is both basic and inescapable! And that the grace and beauty that is oft-times symbolized in all living things is, in fact, an authentic reflection of the loving God Who created all things and Who — when rebellious man willfully betrayed that love — sent his Son, Jesus Christ, on a mission of redemption and rescue! And when we are able accurately to assess the prodigality of such divine concern — of which the Cross is the poignant reminder — there may be created a wider awareness of the ways in which our heedless societies have been injuring the environment, and wasting the heritage of man.

I am not at all certain, but I believe that a clue to our survival in the universe — is the proper and right use of 'prodigality' as an attitude with which to confront the increasingly complex dilemmas with which modern society serves us all! And, as a methodology for enhancing the quality of life on our plundered planet, I am suggesting that we follow St. Paul and the New Testament — and strive to emulate the "foolishness" of God — which is wiser than the wisdom of men.

It was an unusual and profound insight of St. Paul's that gave us the phrase, "the foolishness of God." And like all phrases struck off in moments of brilliant insight, it is true — probably in many more ways than that consciously intended by St. Paul. For example, the phrase may suggest to us one aspect of the meaning of the glory of the world about us, so inescapable on such a day as this, and for which we have been engaged in giving thanks in psalm and song!

One simply cannot live in this world, and love it much, and still believe that God is only wise! For there is everywhere about us such riotous extravagance, such purposeless profusion and heady splendor which, if it be not proper to call it "foolishness" – is surely not wisdom, not precise and carefully calculated portions, anyway. You know, the heavens have never been said to declare the wisdom of God, but rather what would appear to be his "foolishness," his gorgeous play-ful-ness – indeed, His Glory!

A minor, unrecognized poet in the deep South, captured this quality of God's nature in these memorable words:

"God, thou hast made the world so beautiful –
A bower of June, and roses gay a-bloom.
And, though it were not enough to grow
Gave them perfume.
God, thou hast made the world so beautiful –
A flock of birds on pinions swift and strong
And – though it were not enough to fly
Gave to them song.
God – thou hast made the world so beautiful –
A billion beings, soul their priceless gem,
And though it were not enough to live
Gave love to them."

We generally think of God as deliberate and purposeful. And we hear such a phrase as "the definite plan and fore-knowledge of God." We recognize, too, that His intentions are often obscure and that His purposes run deeper than we can hope to follow with our limited understanding. We can say, with the Psalmist, "How unsearchable are his judgments, and how inscrutable his ways." But all the while we know that His judgments are wise, and that His ways are conscious, careful ways. How otherwise could we trust ourselves to His keeping both in life, and in death?

However – even though such reflection answers to one aspect of God's being, it simply does not take account of all that we may know of Him – if the nature of nature is any clue to the nature of God, as, indeed, it must be. Not only is it futile to ask what was God's purpose in making things as they are. It is also impossible for us to suppose that he did so with what we call "a purpose" at all! We are told that He knows each star by name – and this we can believe, for each separate star is the work of His hand. But that He created each star for some use – some practical utilitarian purpose – or as a means to some end – this passes belief! The stars do not exist because of their "utility value," so far as we can see. They exist because God found joy in making them! The earth and the heavens in their mysterious fulness cannot be explained as planned constructions, the end product of conscious purpose and labor. Rather do they symbolize the illimitable freedom, the pure joy, the boundless creativity – yes, the "foolishly" wasted beauty of God! If the Scriptures are to be believed – when creation had run its course – God did not look upon it and see that it was logical, or useful, or practical – or any of these things! "God saw that it was good." And that says something precious about the nature of God.

If this is true about the nature of the world – and I, for one, believe profoundly that it is – then it is clear that something besides wisdom is required to probe its deepest mysteries, to enjoy and share in its life richly and intimately. We begin to understand that a deep necessity gives support to Jesus' words, "Thou hast hidden these things from the wise and the prudent, and hast revealed them unto babes." And, also, why he should have insisted that only the child-like (not the "child-ish," mind you) can see the Kingdom of God. In fact, the thing that seems to explain Jesus' own ability to get so near the "heart of life," and to mingle with the universe so completely, is that he understood something of this "foolishness" of God – and made it his own both in word and in deed!

Tell me, is it not the very distinction of Jesus' teaching that it was not "wise" at all – not according to the world's standard of wisdom! But – why do we listen when he says, as he did say, "Resist not evil; if a man smite thee on one cheek, turn to him the other;" – or, "If any one would sue thee at law, and take away thy coat, let him have thy cloak as well." Or – still more preposterous, "Take no thought for your life, what ye shall eat or what ye shall drink, nor yet for your body, what ye shall wear;" or – incredulously – "Love your enemies, pray for them that persecute you." Why, I am asking, do we listen to such words, and listen to them not as to merely human words; but as to the words of God, Himself? Surely, it is not because they strike us as prudent words! It is not because people can demonstrate any transparent wisdom in them! It is not because we can justify them with logic, or even prove them by example!

It is rather that they seem to answer – as the more reasonable and moderate words of other teachers do not – to something strange and deep in the nature of the world, and, therefore, in ourselves who belong to it. Actually – on reflection – could any words seem more foolish? And yet – something we sense in the world about us, and therefore find in our hearts, will not permit us to forget them, or – despite our unfaithfulness to them, to deny their truth! Ah – that "foolishness of God!" That will be our death – yet! Or, in this wild, mysterious universe, the only viable possibility we have of obtaining life indeed!

As we review the tense drama of the New Testament – and the marvelous life and death of Jesus – which is its substance and texture – the very nature of God (and hence the nature of the world) is discernible most clearly in those events and stories indelibly marked by costly prodigality or "holy wastefulness."

We remember the Prodigal Son – and he was wasteful in an unholy manner. But the real prodigal was the father: dividing his living with an arrogant, disobedient son who leaves home gladly — watches constantly for his return, eventually sees him coming, runs to meet him, falls on his neck, kissing him, puts the best clothes on him, feeds him like royalty — tell me, was there ever such a Prodigal Father? And through it the Bible says, "That is reality — because that is of God."

Or — one recalls the Prodigal Employer: who insisted upon paying everybody he employed the identical wage, no matter how long, or how short a time they worked! That would drive the architects of a capitalistic system up the wall! But the Bible says, "This is reality — because that is God in relation to people!"

Or — the Prodigal Samaritan — foolish, foolish "do-good-er," in that ever dangerous road! Interrupting his own mission to minister to a stranger with a care that overflows all the parameters of reason and duty! And you want to say, "Imprudent man! Crazy man!" But the Bible says — that's God! That's for real! That's at the heart of the universe!

Once a woman broke an alabaster box of precious ointment, and poured it upon Jesus. And someone prudently complained, "Why the waste? The ointment should have been sold and the money given to the poor!" And — as a justification of her actions — Jesus' answer seems singularly unconvincing! For the truth is her act could hardly be "justified;" it was extravagant; it was wasteful! But Jesus said, "Let her alone!" (In our vernacular, "Get off her back!") She hath done a beautiful thing! The 'spilled' ointment was for him, a symbol of the vast, creative goodness, the wildly self-less love of God, poured out for the world in such utterly wasteful abundance! The only legitimate, durable way there is to conserve that which is precious, that which is redeemable!

And so — the Cross, grim and glorious that it is, exhibits to us this same foolish, extravagant goodness! Would it not have been more prudent to recognize that love could not follow its own way in a world where hatred and selfishness are so firmly established; that one could not afford to be freely generous in a world so bound by the narrower conventions of religion, race, and class? Would it not have been wiser to recognize that something has gone so wrong with man that he simply cannot receive, or even tolerate the goodness of God. And — having recognized this — declared it all "not worth the candle," not worth the sacrifice!

Yes, Jesus, Himself, must have had some brush with this in Gethsemane!

But where He emerged, all of us for whom He died eventually have to emerge, too. For we cannot finally deny what our hearts know. And we cannot finally reject what our hearts love. For the God Who spreads above our heads the glorious night, has also set

(Continued on page 7)

Desert House

DESERT HOUSE EXPANDED; FEATURES NEW LAD CUTAK MEMORIAL DISPLAY

The Garden's Desert House, extensively renovated in 1969 and 1970 through the generous gift of Mrs. Owen Jacquemin Sullivan in memory of her husband has recently been remodeled with the addition of a new memorial display.

This final phase of the remodeling program added a number of important features highlighted by the Lad Cutak Display located at the west end of the Desert House. The Henry Shaw Cactus Society, which Mr. Cutak founded in 1952, established the "Ladislaus Cutak Memorial Fund," in 1973 to assist in the construction and maintenance of our cacti and succulent collection. The attractive display cases, protected by plexiglas, make it possible to exhibit a wide range of rare cacti and succulents, many of which were collected and cared for by Lad. This is the first time that many of these plants will have been placed on public display and interpretive signs will be added.

In this same remodeling program, the heating system has been improved, a mound of volcanic rock has been constructed near the east entry at the door and the door at the west end of the House has been opened to allow visitors to walk out onto the terrace garden to the west of the Climatron. Pathways have been paved in the terrace garden and when completed this walk will link the Desert and Mediterranean Houses.

The Garden extends its thanks to Mrs. Owen J. Sullivan whose generosity made it possible to initiate this redevelopment and to the Henry Shaw Cactus Society and all of Lad's friends who chose to honor his memory in this way.

GARDENING IN JULY

In the increasingly hot weather, *grass* may be beginning to burn out this month. One cause is cutting it too close to the ground; another, the lack of adequate feeding earlier in the year. Water, to the equivalent of two inches of rain, is needed once every ten days.

Avoid feeding trees and shrubs from now on so as not to encourage late soft growth that may be winter killed due to the plant's not hardening off early enough in the fall.

Red spider mites do much damage to evergreens and other plants at this season, particularly when the weather is dry. Signs of their presence are fine webs, pale leaves that appear to have been pin pricked, rusty colored needles. Spray affected plants (except fruits and vegetables) with malathion, aramite or kelthane in early July and repeat in 10 or 12 days if necessary.

Wisterias may be heavily pruned now to control growth and encourage better flowering next spring.

Hybrid tea, Floribunda and **Grandiflora** varieties of roses may be rejuvenated now for good flowering in the fall. Remove all faded flowers and the stems they grow on so that only a couple of 5-part leaves remain below the cut. Eliminate weak or twiggy growth and generally try to achieve the same consolidated plant structure that preceded the June flowering. It may be important to feed with a balanced liquid fertilizer to give extra strength to your roses and build them up. With judicious pruning and feeding, the fall flowering can be even better than the spring. It is important to continue to remove the old blooms, not only on your roses but on other garden flowers to keep the succession of bloom coming on. Many plants, once they are allowed to set seed, will not flower again.

Hardy mums should have their last pinch made by the middle of the month. Give a good feeding of liquid fertilizer to get better flowering later on.

Oriental poppies have become dormant by mid-July and may be divided successfully now. If roots are cut into two-inch pieces and planted in good soil, most of them will develop new plants.

Iris should now be divided and new roots set out. This is also the month to divide day lilies and reset Madonna lilies. Order new lilies for October planting now as many varieties sell out early. A great variety of hardy lilies may be seen this summer at the Garden in the Knolls amongst the new shrubs.

Perennials may be started from seed now. Try sweet william, columbine, candytuft, coreopsis and many others. Buy good seed and follow normal procedures for treating seed and seedlings. Plants will be a good size to go into permanent areas in mid-September.

Summer mulches should be applied to areas not covered earlier to protect moisture and to keep roots cooler. Check all mulches to see that no weeds are showing through and remove any that are at once. This is a critical period to continue vigilant weed control and to see that the garden is well cleaned before going on vacation so that you do not return to a mess of weeds and little else. Adequate mulching will prevent the weed growth (the pulled weeds themselves make good mulch if seed was not allowed to set before pulling) when applied before vacation time.

Cuttings of any of the plants that you didn't get to last month can still be done early in July. If these are rooted under moist, shaded conditions, they will make a good root system and can be potted up in late August for planting out later in the fall.

House plants outdoors should be regularly checked for moisture, fed and trimmed to keep them in good shape and health. Late this month, cuttings should be made of coleus, geraniums, everblooming begonias and other plants that may be needed for the house next winter. Root in moist sand or perlite and peat. It often helps geranium cuttings to root if they are allowed to dry in a shady, airy place for several hours before putting them in the rooting medium.

Hanging baskets, for good effect all summer, need daily watering and a good feeding program. Most of these have very limited soil and may by now be completely filled with root action. To keep your plants in good condition, it is advisable to use a well balanced liquid fertilizer at least twice a week when daily watering is required. Some of the varieties of petunias, etc., may need to be cut back to encourage new breaks and better flowering.

Fresh vegetables are now at their peak. Beans, beets and carrots can still be planted. Prune excess growth from tomatoes to encourage more fruit.

Keep your garden notebook up to date and jot down changes you see now that could improve the garden next year. Record good varieties that you wish to add, recording how used, color and height of plants.

The compost pile must be kept moist at all times – water heavily at two-week intervals to encourage rapid breakdown. Add weeds and other refuse to it and be sure to turn the pile over once during the summer to get the outside of the pile into the center where it will rot. □

FLOWER SUNDAY SERMON *(—from page 5)*

eternity and the infinite spaces of the stars within our very hearts — and we cannot escape our nature and our destiny. Our wisdom must finally yield to the wonder of His glory, and our proud strength, to the relentless pressure of His love!

Not long ago there came to my desk for funding from the General Convention Special Program for help to the poor in ghettoes, an application from a community organization, mostly Black people, in the slums of a midwestern city. The application seemed "routine enough" in its form, its content, its explanations and its projected hopes. But it was the way in which the application ended that caught my attention anew! For it was a prayer, a prayer which I had never seen or heard, but which I find, now, I cannot forget!

> "Our Father," it said, "Save us for Heaven's sake; and for earth's sake PLEASE MAKE US WORTH SAVING."

To which I add my own fervent "Amen." □

CLEVELAND HIGH SCHOOL BAND AND SINGERS TO PERFORM AT THE GARDEN JULY 12 AND 26

The Cleveland High School Jazz Band, under the direction of William Habetler, will perform at the Garden, July 12 and 26, from 7:00 to 8:00 p.m. Both concerts are sponsored by the Mayor's Council on Youth and will feature music symbolizing "big band jazz" and "pop" vocals.

GREEK DANCERS WILL PERFORM JULY 28

At 2:00 p.m., Sunday, July 28, Greek Dancers and Musicians from the Dodecanese Islands will perform at the Missouri Botanical Garden. The Company consists of thirty folk artists participating in a national tour under the auspices of the Smithsonian Institution and in cooperation with the American Revolution Bicentennial Administration and the National Endowment for the Arts. The performance, open to the general public, will be staged at the new Shapleigh Memorial Fountain, south of the Climatron.

ST. LOUIS SYMPHONY STRING QUARTET WILL PERFORM AT GARDEN AUGUST 2

The St. Louis Symphony String Quartet will perform on the site of the Shapleigh Memorial Fountain, 7:00 p.m., August 2, 1974.

The Quartet, under the direction of Max Rabinovitsj, has made a number of appearances throughout the St. Louis area and has been enthusiastically received by the music-loving public. There will be a $1.00 charge — all children free. Bring your blankets.

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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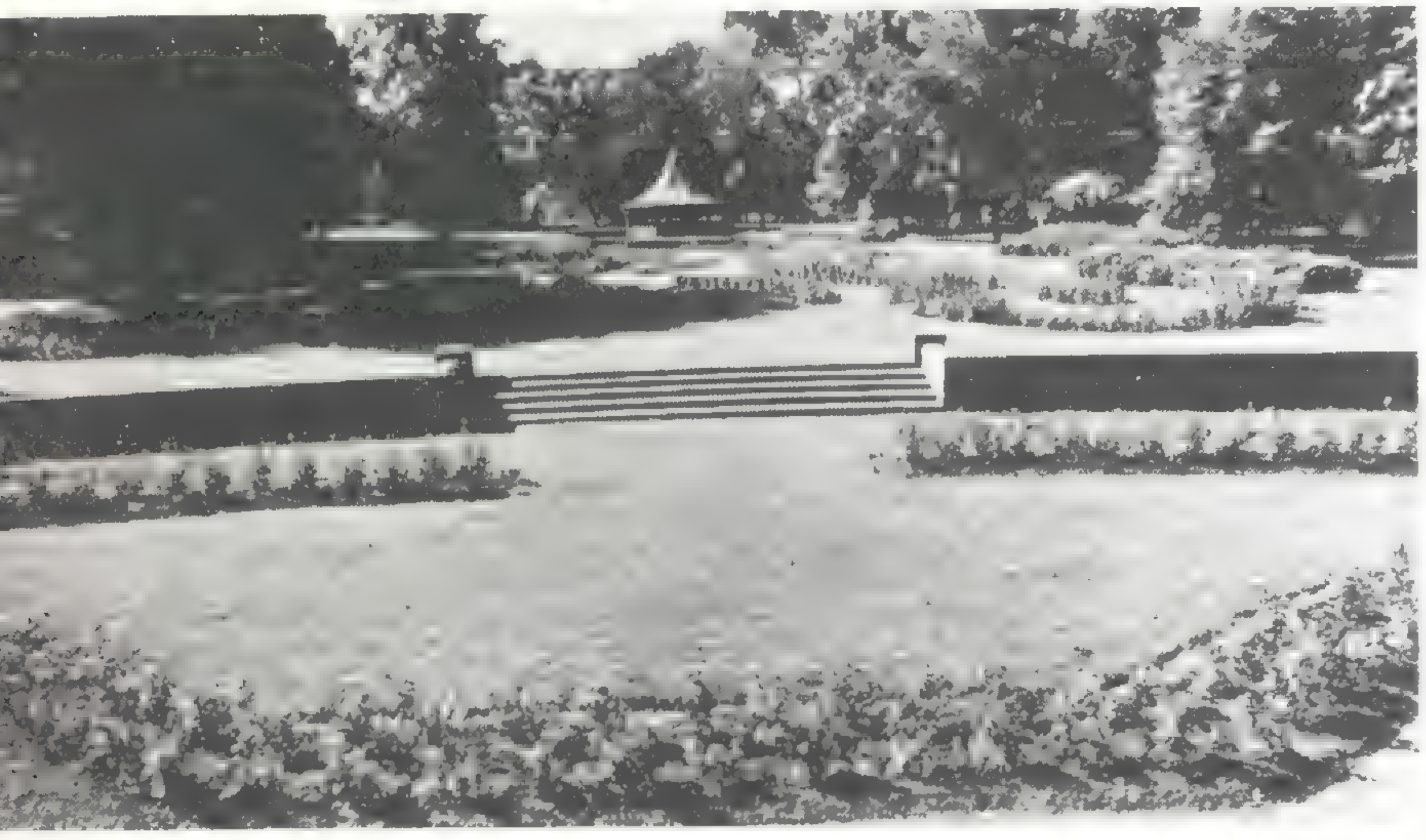
Missouri Botanical Garden Bulletin

An English Garden Party



'Proceeds . . . will be applied to the development of the South Rose Garden''

The entrance to the Garden at Cleveland Avenue, 2221 Tower Grove Avenue, will be open on Septem-ber 20, for guests attending ''An English Garden Party.'' Proceeds from the Benefit, co-sponsored by Stix, Baer and Fuller, will be applied to the de-velopment of the South Rose Garden.

The setting is picturesque and historic, a blending of old and new to create an atmosphere of elegance.

From the old-fashioned, wrought-iron gate to the South Rose Garden, guests will enjoy the beauty of nature enhanced by special lighting effects. Many features in this area rich with nostalgic reminders of Henry Shaw's era add to the English charm. The Museum, the gatehouse cottage, and Mausoleum grounds combine with the Victorian splendor of Tower Grove House to provide a perfect setting for this year's gala event.

The interior of a magnificent marquee, erected in front of Tower Grove House for dining and dancing, will be adorned with hanging baskets of cascading flowers and vines. Pink and red table decorations and English basket centerpieces with their variety of flowers will add gaiety and color.

The introduction of Lord Snowdon at 7 p.m. will highlight the evening's activities. Other distinguished guests are the Honorable John A. Ford, C.M.G., M.C., Director-General of the British Trade Development in the United States and Mrs. Ford and the Honorable Archibald Rendall, O.B.E., Her Britanic Majesty's Consul General, St. Louis, and Mrs. Rendall.

During the cocktail hour at the Gazebo, overlooking the South Rose Garden, guests will view the new Shapleigh Memorial Fountain and stroll among the roses. A fashion presentation by one of America's most acclaimed fashion designers, Bill Blass, and by Zandra Rhodes, a prominent English designer of women's clothing and accessories, will also highlight this hour.

The internationally famous, award winning St. Andrew Bagpipe Band from Kansas City featuring Scottish dancers will add to the evening's entertainment as will the Pearlies of London, bedecked in sparkling attire which dates back to the 1880's.

Call 865-0440 for reservations.

Saint Louis Symphony under the direction of Leonard Slatkin will perform at the Garden on September 13, 1974 at 7:30 p.m.

''The Gazebo overlooking the South Rose Garden.''

Volume LXIII Number 7
September, 1974

HISTORIC AMERICAN BUILDINGS SURVEY OF THE GARDEN

" . . . an invasion of architects, landscape architects and architectural historians . . . "

by William M. Klein

Visitors to the Garden this summer were witness to an invasion of architects, landscape architects and architectural historians whose drawings and writings about the Garden will eventually become a part of our National Archives. During the past three months, a survey team assembled through the offices of the Historic American Buildings Survey in Washington, stretched their measuring tapes, crawled through attics, pored over volumes and literally "combed" the Linnaean House, Mausoleum, Museum and Townhouse of the Missouri Botanical Garden to obtain measurements and make drawings of these buildings. Sponsored by the National Park Service of the Department of the Interior, HABS has been gathering drawings, photographs and documentation for the National Archives since 1933. The program is conducted in cooperation with the American Institute of Architects and the Library of Congress which is the repository for these records.

The Survey team consisted of five graduates in architecture, landscape architecture and architectural history who worked on various features to assemble the necessary data. Steve Bauer, working on his Master's at Columbia University in Restoration and Preservation, made drawings of the Museum and Townhouse. Patrick Ackerman, B.A. in Architecture from Washington University and now working on his Master's, measured the Linnaean House and recorded his findings. Suzanne Fauber will receive her Master's degree in landscape architecture next year from the University of Virginia. Suzanne contributed the drawings of the Mausoleum and also worked on the Garden's landscape drawings. Carol Macht is working on her Master's in landscape architecture at the University of Michigan. Carol made landscape drawings as well as detailed drawings on structural features which are scattered throughout these buildings. Carolyn Hamm spent her time reading volumes in the library and putting together the historical documentation. Carolyn received her A.B. in Art History from Princeton University and is presently workin on her Master's in History of Architecture and Urba Development at Cornell University.

The Director of this project, which included dra ings of entryways, gazebos and the lodge in Tow Grove Park, was Mr. Robert Harvey, Associate Pr fessor in the Department of Landscape Architectu at Iowa State University. Mr. Harvey noted that th project represents a departure from the usual HAB surveys in that landscape architecture has been adde for the first time. In the process of digging into th Garden's library and archives approximately 20 dra ings of the Garden from the firm of Frederick La Olmsted were discovered. Olmsted (1882-1903) w one of this country's most far-reaching environment planners and designers and contributed to the d velopment of cities and regions of the National Pa System in the U.S. Forest Service. Olmsted is perha best remembered for his prize winning design Central Park in New York in 1858. The Missou Botanical Garden is listed in the Register of Histor Places, one of about 14 in the St. Louis area, an because of its national prominence was selected f this project.

The development of these detailed architectur drawings is essential before any restoration work ca be accomplished. Henry Shaw's Townhouse, co structed in 1849-50 at 7th and Locust St., was one the four structures selected for this project. Plans an specifications for the restoration of the Townhou are being drawn up and through a grant from th Missouri State Park Board in the amount of appro imately $15,000, this work will be initiated th year. The first phase of this restoration is to arrest th deterioration of the existing structure while funds a being sought to complete the project.

As the summer closes, the drafting boards a packed up, the pens cleaned and put away, a important step has been taken at the Missouri Botan cal Garden. Many facts, long buried in the course its 115 year history have been uncovered and ca now be brought to bear on the job of restoration the Garden's historic tradition, an integral part of th Master Plan.

" . . . landscape architecture has been added for the fir time." John Elsley (left) Curator of Hardy Plants and Robe Harvey.

MEMORABLE TOUR OF ENGLISH GARDENS BY MISSOURI BOTANICAL GARDEN MEMBERS

by John E. Elsley

It was certainly difficult for the 40 members of our Garden group to equate the serious prevailing economic and political situation in England with all we were privileged to view during our visit! Without exception the gardens and countryside visited were in magnificent condition — the unusually mild preceeding autumn and winter undoubtedly contributing to this factor. Even the weather remained perfect for the duration of our visit — one of the most crucial items for an itinery such as we had planned.

From our London 'base' at the Cumberland Hotel, we visited gardens which are representative of the differing styles of English garden design. These can be broadly grouped into three distinct classes: 'museum pieces,' where the garden is maintained for historical reasons as close as possible to the original form or recent constructions of historic layouts. Secondly, gardens which combine formality with the characteristically English informality, and finally 'paradise gardens' laid out in the modern English style made to aesthetically utilize as diverse a range as possible of plant material in, for example, a woodland setting.

Museum Gardens

Several of our visits afforded examples of the 'museum piece' gardens. At Stourhead in Wiltshire, is arguably Europe's finest landscape garden, laid out by Henry Hoare a London merchant banker between 1740 and 1760. Constructed around a series of artificial lakes, ancient classical architectural features blend subtly with native woodland plantings. Later, to this original setting, Hoare's grandson added many 'exotic' species, especially Rhododendrons, which are highlighted when in bloom during May. Apart from seeing the various historic buildings and sections of the extensive living collections, our visit to the Royal Botanic Gardens, Kew, was highlighted by the recently completed Queens Garden situated behind Kew Palace (1630). This is representative of a garden appropriate to the period of the palace's construction. Divided into two sections, the garden consists of a formal area defined with plantings of yew and boxwood and an informal 'nosegay' garden in which are displayed medicinal and herbal plants of the period. A formal arched *Laburnum* walk encloses this latter area, and in full bloom left us with an unforgettable memory. Two formal sunken gardens and a small 'knot' garden at Hampton Court provided examples, in an authentic setting, of 16th century garden design.

Informal-Formal Combination Gardens

The delightful undulating countryside of the Weald of Kent and Sussex harbours many of England's finest gardens. Sissinghurst Castle and Great Dixter are two in this area which are representative of our second category of garden styles. Sissinghurst is composed of a number of charming small gardens in the setting of the surviving buildings of a Tudor/Elizabethan manor house. Created in 1930 from a ruin and wilderness by Victoria Sackville-West and her husband, Sir Harold Nicolson, Sissinghurst exhibits an excellent informal utilization of plant material within a series of more formal areas — the charming 'white' garden exemplifies this theme. We were privileged, prior to walking around the garden, to receive an introduction to Sissinghurst by Nigel Nicolson, the noted biographer and son of the creators of the garden. In the setting of a magnificent 15th century manor house, the architects Edwin Lutyens and Nathaniel Lloyd laid out the gardens of

"Stourhead in Wiltshire, is arguably Europe's finest landscape garden . . . "

"Sissinghurst exhibits an excellent informal utilization of plant material within a series of more formal areas . . . "

Great Dixter in 1910. In this garden a wide range of interesting plants harmonize with various buildings – a trailing *Clematis montana* over the roof of a rustic barn was an especially memorable sight. However, nowhere is this style of gardening better expressed than at Hidcote Manor in Gloucestershire. Located deep in the magnificent Cotswold countryside, and administered in common with Stourhead and Sissinghurst by the National Trust, the garden was commenced in 1905 by an American, Major Lawrence Johnson. In no garden are the plants utilized better for such features as form and colour – indeed Hidcote is considered by many the most beautiful garden in England. Vistas allow views into the surrounding countryside, although the charm of the garden is achieved by the creation of a series of small, secluded units, an effect achieved by planting a range of formal hedges which are today magnificently maintained. These small gardens contrast markedly with each other and as one passes from one to another, there is a continual element of surprise. Several excellent garden plants have originated at Hidcote – *Hypericum* 'Hidcote' and *Lavandula* 'Hidcote' are two examples.

Paradise Gardens

The modern English 'paradise' style was observed to perfection at the Saville Gardens in Windsor Great Park. Commenced in 1932, this garden today displays an extensive range of superbly cultivated plants with a particular emphasis on Rhododendrons and other woodland species. Moisture loving subjects like primulas thrive around the lakes and within the woodland glades – the entire 'growing atmosphere' of this garden was dramatically highlighted for us by a brief rain shower! The adjacent Valley Gardens begun in 1947 contain comprehensive *Rhododendron* collections largely displayed in woodland settings. At Wisley in Surrey, the Royal Horticultural Society has its garden where elements of this 'paradise' style are also evident. However, Wisley is more a modern display and educational garden where visitors can observe a series of major features incorporating many of the recent gardening trends. The rock garden, trials field, heather garden, demonstration fruit and vegetable gardens and glasshouses are among notable features.

Annually, the Royal Horticultural Society organizes the Chelsea Flower Show which is located in the scenic grounds of the Royal Hospital, Chelsea, and which as an event is pre-eminent in the horticultural world. In addition to the outdoor exhibits which comprehensively cover all aspects of gardening, the major plant displays are housed under a 3.5 acre tent erected especially for the four day show. One never tires of seeing Chelsea – each year there are exhibits which remain in one's memory. This year a woodland garden laid out by the Saville Gardens was a major highlight. If one becomes a little tired of the horticultural exhibits then the visitors themselves never fail to be a source of interest – indeed our own party entering the main entrance brandishing giant lunch boxes drew many interesting comments!

"Moisture loving subjects . . . thrive around the lakes and within the woodland glades – Saville Gardens"

Other Highlights

Memorable as our horticultural visits proved, we all treasure thoughts of other activities during the visit. Many will remember with pleasure our stop at the prehistoric, megalithic monument at Stonehenge, now considered by many experts to have functioned as an extremely sophisticated 'computer' for predicting astronomical phenomena. Our overnight stay at Salisbury, and the chance to see the cathedral, one of England's finest Gothic buildings, by floodlight must rank among our most impressive views. A detour from the Saville Gardens enabled us to visit the Royal Air Force Memorial at Englefield Green, erected as a tribute to British and Commonwealth airmen killed during the Second World War with no known graves. This beautiful memorial with its magnificent view over Runnymead, the Thames and Windsor Castle, is a location visitors to London should attempt to visit. At Hampton Court we were entertained to a 'Tudor banquet' which provided us with considerable pleasure especially figuring out how to consume our meal with the limited implements provided – most of us eventually resorting to our bare hands!

Not only did we all participate in a thoroughly enjoyable visit, in addition we were exposed to a range of new gardening ideas and practices. Although various conditions differ considerably in the sphere of gardening when comparing St. Louis with southern England, nevertheless, we are confident that many of the principals we observed can be utilized in our own future gardening plans. □

DR. GENTRY RETURNS FROM MADAGASCAR; MANY NEW PLANT SPECIES COLLECTED

Dr. Al Gentry, an Assistant Curator in the Missouri Botanical Garden Herbarium, has recently returned from a plant-collecting expedition to Madagascar. The trip was sponsored by a grant from the National Geographic Society.

Lying off the southeast coast of Africa in the Indian Ocean, Madagascar is one of the world's largest islands. To biologists, it is also one of the most fascinating places in the world. The island's many unusual and primitive forms of life include relics of ancient groups which no longer exist as well as strange organisms which have evolved during Madagascar's 50 to 100 million years of isolation from other land masses. The long isolation of Madagascar allowed its primitive organisms to survive by shielding them from the more rigorous competition prevalent on continents. Thus Madagascar has become a showcase of evolution, furnishing intriguing glimpses into the world's biological past.

Biologist-author Sherwin Carlquist has noted that, "Madagascar reminds one of a large history book filled with hundreds of characters." Yet, as is true of most tropical areas, the flora of Madagascar is still poorly known. Even during this decade many new species of plants have been discovered on the island some of them veritable missing links of outstanding importance to attempts to solve the mystery of the origin and distribution of flowering plants.

The Missouri Botanical Garden is recognized as an official repository of African plants in North America and has accumulated significant collections of plants from continental Africa. However virtually no collections of the very interesting and important plants of Madagascar have been obtained here or by any other institution in the New World. Thus American botanists have been unable to easily study actual specimens of the Madagasy flora. Because of the lack of available plant collections from Madagascar and the importance of these plants to so many evolutionary studies, the Missouri Botanical Garden hopes to undertake a long term program of botanical field work in Madagascar.

Dr. Gentry is the second member of the Garden's scientific staff to visit Madagascar recently. Dr. Marshall Crosby and his wife Carol spent 6 weeks in Madagascar in 1972 studying and collecting the mosses of the island. He is currently working on a moss flora for Madagascar, which will be the first treatment for that country of this often-neglected group of plants.

Floras such as the one Dr. Crosby is working on provide inventories which are indispensable to planning the utilization and development of a country's natural resources. Dr. Gentry's trip and planned future work on the island by Dr. Goldblatt and others may have important economic side effects.

Elfin forest of Tsaratana ". . . the island's people curious but open and friendly."

The Missouri Botanical Garden has agreed to cooperate with the USDA's Medicinal Plant Resources Laboratory in a program to screen the plants of Madagascar for possible anti-cancer properties. The Garden will help in obtaining the samples and provide the expertise to identify the plant species sampled. Gentry's field work was in part a preliminary step in this project which will serve both to pinpoint regions containing plants of special medicinal interest and to provide a reference collection with which future specimens can be compared and identified.

Dr. Gentry's collections were obtained in the almost inaccessible mountains of northern Madagascar. A highlight of his trip was climbing the Tsaratana massif, the highest point on the island. The first American to visit many such out-of-the-way places, he found the island's people curious about him but open and friendly. His collections from these remote regions had to be carried, often for many kilometers, to the nearest road or cart trail by porters from local villages. These specimens were preserved in the field in formaldehyde and dried on a plant dryer constructed in the capital city of Tananarive before being shipped to St. Louis for further processing.

(Continued on Page 10)

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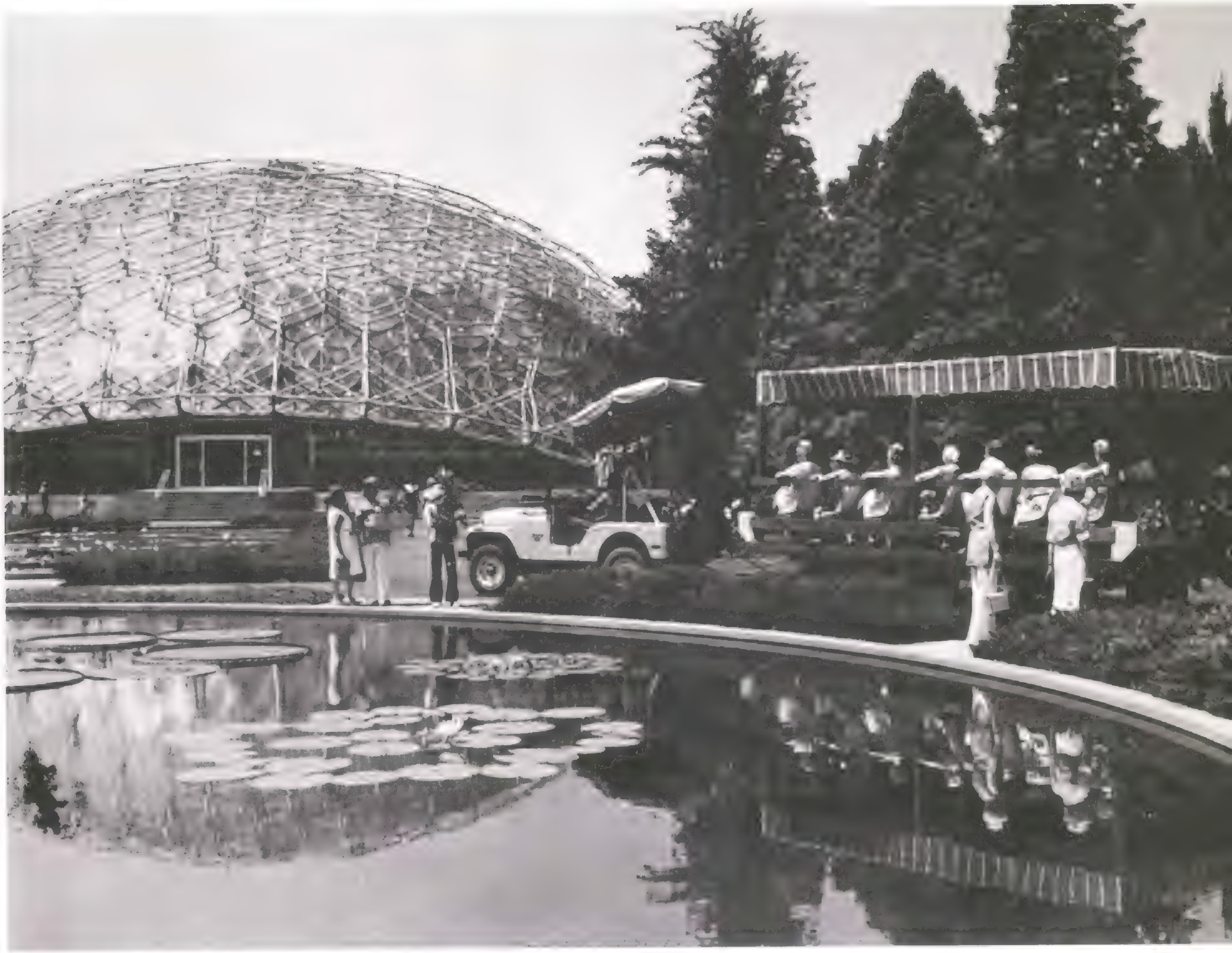


MEMBER'S DAY — **August 1** — *An Enthusiastic Response*

SAINT LOUIS SYMPHONY — **May 31** — *Leonard Slatkin, Conductor*

ZMAN PROGRAM — Summer of '74

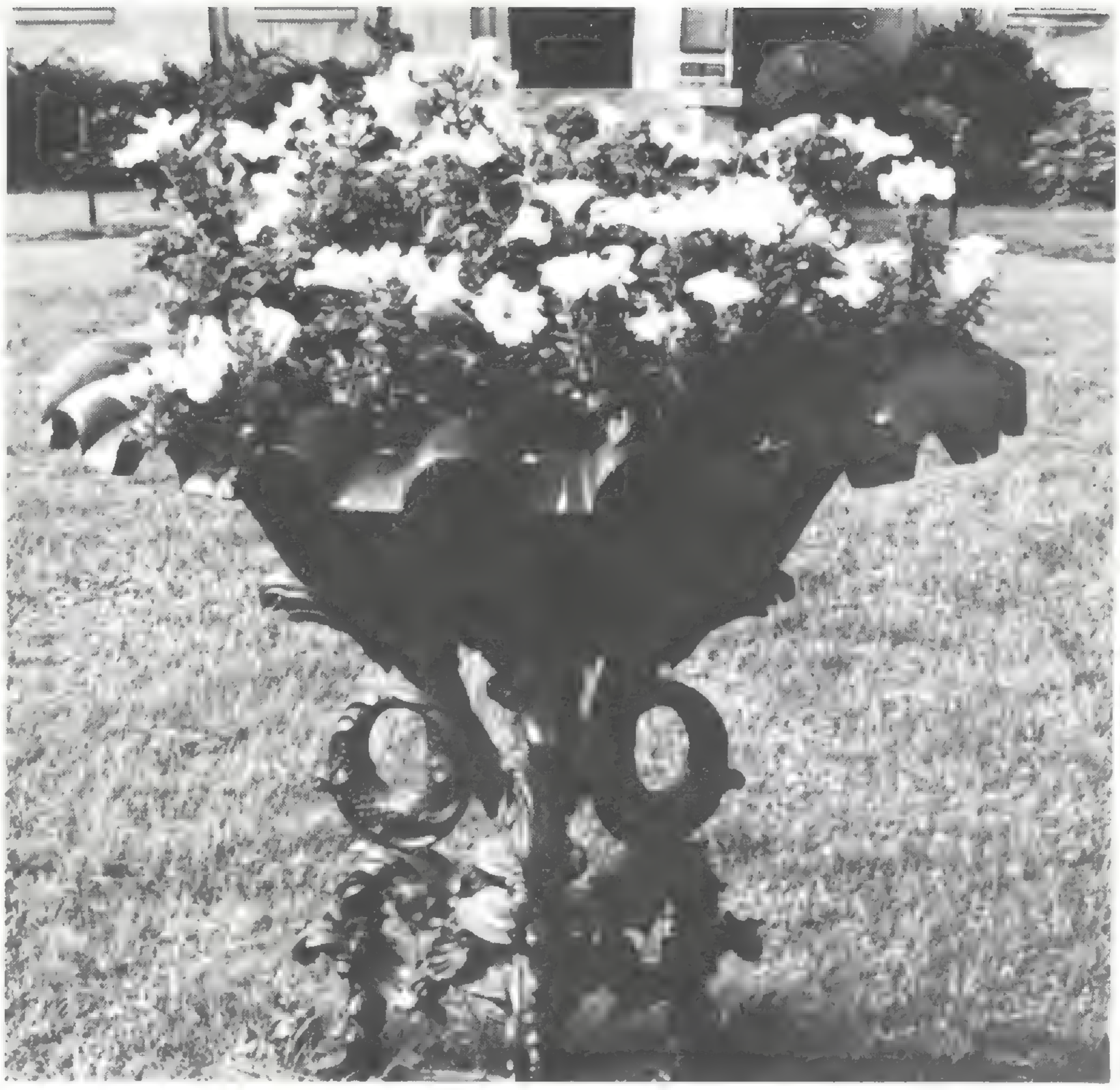
ning to experience nature with all the senses

GREEK DANCERS — July 28

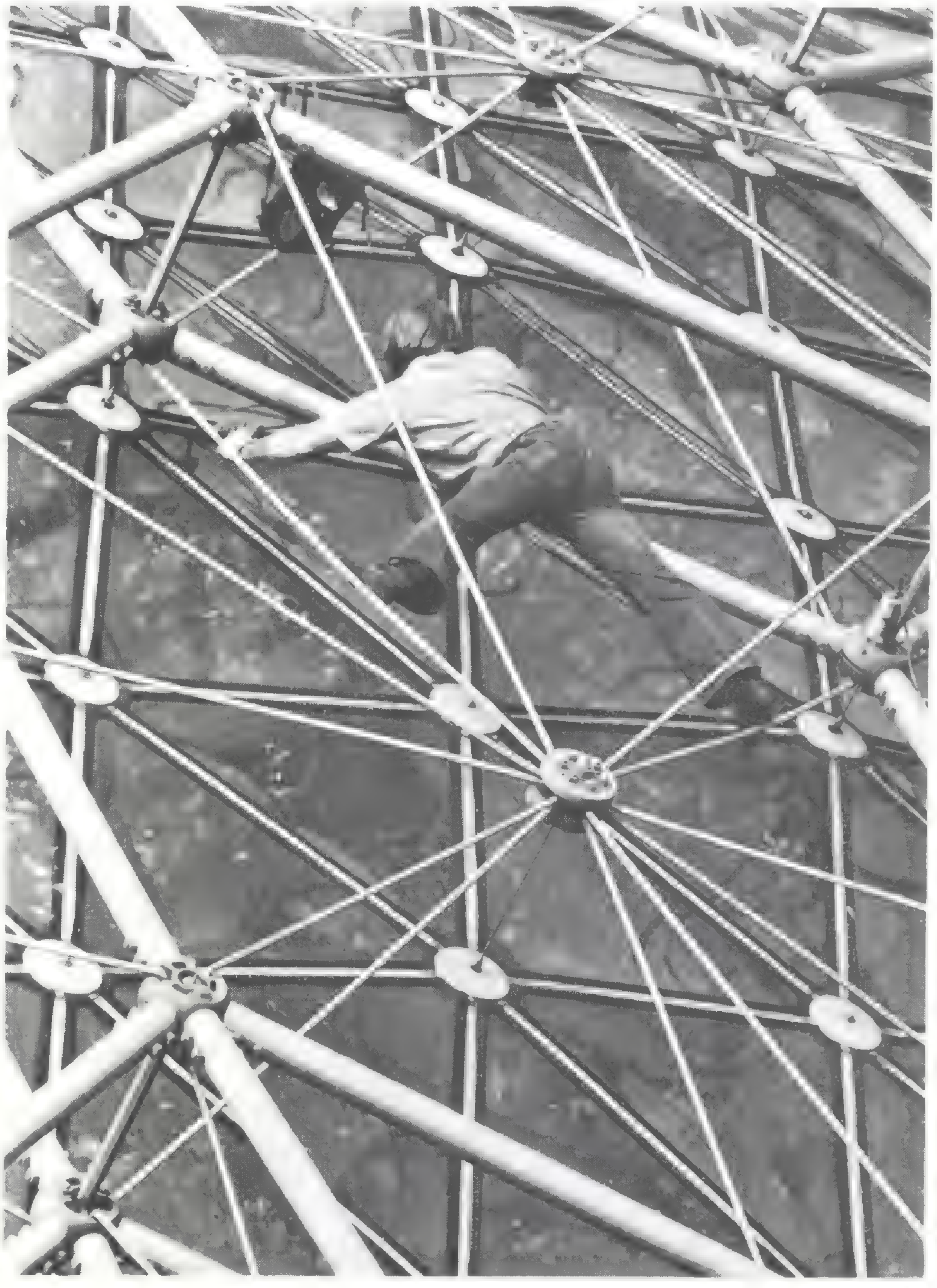
Musical expression has been wide and varied this year at the Missouri Botanical Garden as evidenced on July 28 at the performance of the Greek dancers and musicians. Thirty artists performed in a National tour under the auspices of the Smithsonian Insitution in cooperation with the American Revolution Bicentennial Administration National Endowment for the Arts sponsors.

Saint Louis String Quartet August 2

A tranquil evening was in the making as the Saint Louis String Quartet appeared at the Garden on August 2. Strains of a selection by Maurice Ravel "String Quartet" filled the air as well as other compositions especially chosen to highlight this evening.



KIRCHER MEMORIAL URN — *Bulletin June, 1974*



RESEALING THE CLIMATRON

Gardening in St. Louis

GARDENING IN SEPTEMBER

by Robert J. Dingwall

Cleaning Up

This is the month to take stock and prepare for the spring season. A thorough cleanup program should head the list of things to do. Remove any dead or diseased plants or plant parts and take out annuals that have set seed. Weeds should be removed and in some cases pre-emergent herbicides applied to prevent weeds from getting established this fall. Keep up with the insect and disease control program, spraying with Pyrethrum, Rotenone or a combination of the two in the form of DX. Other insecticides can be used such as Diazinon or Malathion, but these should be used with extreme care.

Rejuvenation

FOR THE LAWN, now is the time to renovate the old or start a new one. If the soil is compacted it should be aerated. Many lawns need to be rethatched. Top dress with a rich top soil, high in organic matter such as peat moss or compost. After the lawn has been thoroughly cleaned, apply the top dressing to a depth of 1/2 inch over the entire surface area. A well balanced fertilizer and the new lawn seed should be moist until established and there is a regular pattern of rainfall.

New lawns should have the ground well worked up and enriched with organic matter to a depth of 12 to 15 inches. The organic matter should be applied to a depth of 4 to 5 inches and worked well into the soil. Soil tests should be made and if indicated, lime should be added and raked in. The surface should be raked to a fine grade of tilth and all depressions leveled before applying the fertilizer and grass seed. The fertilizer and seed should be raked in lightly, rolled and kept moist. The object is to get the lawn well established in the cool weather.

Incidentally, in purchasing lawn seed, make sure you get seed of high quality — it's generally worth paying a little more!

FLOWER BEDS should be thoroughly cleaned and will also benefit by applying mulch of partially decomposed compost or wood chips to a depth of 2 to 3 inches. This will both conserve moisture and prevent weeds. Mulch will also reduce the freezing and thawing during winter months. Perennial flower beds will benefit particularly from the addition of organic matter and bone meal worked in around the plants.

Harvesting

GOURDS for winter decorations should be picked before they have been touched by frost. The stems should be cut 2 inches from the fruit which should be taken into the house to dry.

STRAWFLOWERS or everlastings are to be picked when the buds begin to open, tied loosely in bunches and permitted to hang head down, for several weeks while they dry.

Additions to the Garden

EARLY FLOWERING PERENNIALS are best divided now and replanted as needed. Fall flowering perennials should not be divided at this time. They should be left until spring.

This is an ideal month to add or divide peonies that have been in for a number of years but have stopped flowering. Bleeding hearts can also be divided safely in the fall in the same way that peonies are separated.

SPRING FLOWERING BULBS may now be purchased although they need not be planted immediately. Tulips are best held until mid-October and bulbs should be purchased now while it is possible to obtain the best varieties and sizes. All members of the narcissus family should go in the ground by late September. Crocus and snowdrops, scillas and other small bulbs can be planted when they are available on the market. Bulbs for forcing, such as tulips, daffodils or hyacinths are best placed in cold frames and covered with a layer of straw or similar material. Five to six inches of soil should be placed over the top. The area should be kept moist and bulbs maintained in these beds until late December before bringing them indoors.

LILY BULBS should be ordered as soon as possible. Most of these will not be available for delivery until mid-October, but Madonna lilies are available in early September and should be planted just as soon as they can be purchased. Do not allow them to lie around and dry out! Consider planting lilies not only in the perennial border, but in areas that receive shade, such as among shrubbery or under trees where they receive some filtered sunlight. They do well under such conditions and add a sparkle of color to otherwise drab areas. By choosing a wide selection, you will have blooms from early May to mid-September.

BULBOUS IRIS may be planted this month. They should be given protection with a little mulch of leaves or similar material before the ground freezes.

LILY OF THE VALLEY gives best results when separated every three or four years. This work may be done in early autumn. The strongest pips should be selected and planted three inches apart, just below the surface. Gladiolus corms should be dug when the leaves turn yellow. It is well to cure them for a few days in the sun.

DAYLILIES *(Hemerocallis)* make strong growth and should be divided at least every fifth year. They are very "cooperative" and this task may be done at almost any time.

TREES, SHRUBS AND EVERGREENS are best set out in the fall when good choices are available. Evergreens can be successfully planted beginning late this month. Orders should be placed early at the nurseries and it is advisable to select your own plants and have them tagged and delivered at planting time. Planting areas should be well prepared ahead of time, removing most of the old top soil and replacing with equal amounts of top soil and organic matter. No commercial fertilizer should be used until the following year and until the plants have had an opportunity to become well established.

Deciduous trees and shrubs will not be available for planting until later in October, usually after the first light frost or leaves begin to fall. Again, we cannot recommend too strongly, selecting your plants at the nursery yourself and having them delivered at planting time. Deciduous shrubs, particularly hedges, should be trimmed for the last time this month. Pruning of dead wood or branches that are rubbing against one another can still be done on trees while in leaf. Don't overdo it!

After planting, continue a good watering program, equalling at least two inches of rain at weekly or 10 day intervals until a regular pattern of rainfall is established. Do not apply fertilizers to any trees or shrubs. We want these plants to harden off before the winter months.

PORTABLE COLD FRAMES should be set up by mid-September. It makes an ideal place to sow radish, lettuce and spinach for later use when the weather gets cooler. Parsley may also be added to the cold frame for use during winter months.

THE COMPOST PILE that you've been planning to put in but just didn't get around to it, can now be started using weeds and other debris from the garden. Later, you can add leaves. Start with a layer of coarse material and intersperse with finer materials. Keep the pile moist and add some old compost to each layer incorporating bacteria to encourage a faster breakdown.

House Plants and Greenhouses

HOUSE PLANTS set out for the summer should now be cleaned and moved indoors as the month advances. Check plants carefully for insects and spray f necessary and also determine if they are rootbound. Repot as required and prune to control shape and size. Calla lilies which have been dormant in pots for the summer should also be repotted.

Cuttings of geraniums, coleus, begonias made now will make ideal indoor plants.

THE HOME GREENHOUSE should be thoroughly cleaned, washing frames, scrubbing woodwork and spraying throughout the area with a good fungicide which will prevent infection of new plantings. Cuttings of many of these above plants or others that you wish to carry over from one year to the next, can be started this month. Many of these, if grown in individual pots can be used to add a spot of color indoors during those drab winter days. Certainly you should make enough cuttings to provide a sufficient supply of plants to set outdoors next March. Impatiens can be carried over very well this way, and it is a plant that is very useful in shady areas.

Miscellany

POINSETTIAS for Christmas? The plants should be given lots of light during the day, but placed in a dark room from 7 p.m. until 7 a.m., otherwise they will fail to bloom.

CHRYSANTHEMUMS coming into bud can be heavily watered and then moved to other sections of the garden where you want color. Keep them well watered for the first few days after transplanting. HAPPY GARDENING.

BULLETIN BOARD
SEPTEMBER 1974

Aug. 31 – Sept. 8 Henry Shaw Cactus Society Show	Ever see a prickly pear? Cacti and succulents are numerous there.
Sept. 4 – Nov. 15 Williamson Glass Mushroom Exhibit-Lehmann Bldg.. . . .	Beautiful, unique ceramic fungi collection.
Sept. 13 – 7:30 p.m. Saint Louis Symphony	Second outdoor concert at the Garden this year.
Sept. 14-15, 9 a.m.-5 p.m. Fall Gardening Workshop	Fall gardening seem humdrum? We make it easier for everyone.
Sept. 20 – 6:30 p.m. "An English Garden Party"	BENEFIT for the development of the South Rose Garden.
Sept. 21-22 – Exhibit Midwest Regional Men's Garden Club Harvest Show	The harvest is here – from our labor this year.
Sept. 28-29-30 Dahlia Society of Greater St. Louis – Exhibit	The "greatest show on earth" (of Dahlias, that is!)

Classes begin in October – Watch for Brochure in the mail. Above displays are in Floral Display House unless otherwise indicated.

FROM THE ANNALS OF THE MISSOURI BOTANICAL GARDEN

by Marshall R. Crosby

Two large and important families were treated by Garden staff members in the *Flora of Panama* series in the most recent issue of the ANNALS OF THE MISSOURI BOTANICAL GARDEN, volume 60, number 3. A generic key and keys to the species are provided as well as a detailed description, complete synonymy, and list of Panamanian herbarium specimens for each species. Each genus is illustrated.

The Solanaceae, or potato family, was written by W. G. D'Arcy and is one of the largest families of Panamanian plants to be treated for the *Flora of Panama* in recent years. Twenty one genera and over 150 species are present in Panama. While such familiar items as tomatoes, Irish potatoes, tobacco, petunias and peppers are included, the majority of species are peculiar to the high rainfall and perennially warm temperatures of Panama. The biggest genus, *Solanum,* includes 57 species, which occur as roadside weeds, forest vines and woodland shrubs. Some 17 species and one genus, called *Rahowardiana,* completely new to science are described.

The second family is the Bignoniaceae, local representatives of which are Trumpet Creeper and Catalpa Tree. A. H. Gentry wrote the treatment for the *Flora of Panama,* where 35 genera and 75 species occur naturally and 7 genera and 11 species in cultivation. Eleven of the species are described by Gentry as new to science. This is the most important family of woody vines in Panama; members of the family are also important in horticulture and for lumber. The author's extensive field experience in Panama is reflected in his descriptions and discussions of the various species and makes this probably the most thoroughly collected plant family in the country.

The field work undertaken leading to these treatments, brought to light many unique plants which will not be found again because of the continuing destruction of the Panamanian landscape. A grant from the National Science Foundation to the Missouri Botanical Garden makes possible the preparation and publication of the *Flora of Panama* series. □

GARDEN AWARDED NSF GRANT

The Missouri Botanical Garden has been awarded a two year, $30,000 grant from the National Science Foundation in support of a scientific study, "Generic Revision of the Moss Family Hookeriaceae."

Dr. Marshall R. Crosby, Curator of Cryptogams, Missouri Botanical Garden, is principal investigator of this grant designed to develop a greater understanding of fourteen genera of mosses.

Dr. Crosby is a graduate of Duke University where he earned his Ph.D. degree. In 1972 he spent four months in Madagascar and Africa, where he collected over 4,000 specimens for the Garden's Herbarium. □

DR. GENTRY RETURNS *(Continued from Page 5)*

Duplicate specimens of these collections were also left in the two Madagasy herbaria for the use of local botanists and foresters. In the past most botanical research in Madagascar was done by the French with most collections deposited in the Paris herbarium. As they undertake more of the scientific research formerly conducted by French scientists, Madagasy officials are especially happy to have duplicate specimens available for study in their own country.

During the just-completed National Geographic Society expedition, an estimated 10% of the species of the island's very rich flora was collected and will now be represented in the herbarium of the Missouri Botanical Garden. It is not yet known whether any of these collections represent new species, although a number of them have been recognized to belong to the rare endemic plant families of Madagascar. Other still-unidentified specimens or future collections from the island may well prove to include more of the botanical missing links for which Madagascar is so famous. □

GARDEN ACQUIRES ORCHID PAINTINGS

The Garden has acquired five more paintings of Brazilian orchids as a result of the bequest of Mrs. Earl M. Johnston, a life member of the Garden who passed away in early 1973. Mrs. Johnston met the artist, Margaret Mee, during the Garden's 1969 tour of South America, and conceived the idea of commissioning Mrs. Mee to paint an orchid portrait for permanent display in the John S. Lehmann Building.

Margaret Mee has illustrated several important books, and has had her work exhibited as the Hunt Botanical Library, the Saõ Paulo Instituto de Bôtanica, the Rio de Janeiro Botanic Garden, and the Royal Horticultural Society. These five beautiful water-colors are an outstanding addition to the Garden's collections of botanical art, and a fitting tribute to Mrs. Johnston's devotion to the Garden. □

BIRTHDAY PARTIES at the Garden

For Members' children 5 – 15

$30 fee includes decorations, cake, drinks, and favors. Activities arranged to complement the interest of age group of party.

To arrange a date, please call the Garden's Community Services office, 865-0440.

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MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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Missouri Botanical Garden Bulletin

A Japanese Garden will feature shrubs and chrysanthemums adapted to this area.

Annual Fall Flower Show Oct. 26 – Nov. 10, Preview Party for Members Oct. 25

The Garden's Annual Fall Show will be held Oct. 26 through Nov. 10, in the Floral Display House. Members of the Garden will preview the show at a party Oct. 25, sponsored by Jaccard's.

Displayed in this year's show will be 21 different varieties of chrysanthemums, including such types as cushion, spider, shasta and daisy in exquisite fall tones of bronze, yellow, pink, red and orange. A Japanese Garden will feature shrubs and chrysanthemums adapted to this area. New varieties of cascading mums, along with 15 varieties of the tall, single stem mums, will add to the panorama of autumnal beauty that this traditional event affords.

A new dimension to this year's show should nterest Garden members and visitors. A series of lectures and workshops in the Floral Display House will provide information on the making of floral decorations for the home (especially Christmas arrangements) from materials grown on one's own property. Demonstrations on the making of terrariums are among the many instructional aids to be offered by Mr. Robert Dingwall, Chief Horticulturist, and members of the Garden's horticultural staff.

Mr. Dingwall enthusiastically urges all to attend the show "to expand knowledge and enjoy the beauty of a gorgeous array of fall colors." The chrysanthemum, he says, "is probably the most painted flower in the world because it offers to the artist such a challenge in form and texture. Not only is it featured in flower shows around the world, but it is pictured on postage stamps. Its depiction is universal and its appeal never-ending."

FALL LECTURE SERIES TO BEGIN OCT. 7

The Fall Lecture Series for Members of the Garden will be presented on two evenings in October and two in November, in the auditorium of the Lehmann Building.

The schedule is:

Monday, Oct. 7, 8 p.m. John V. Brindle, Art Curator, Hunt Institute for Botanical Documentation, Pittsburgh. "Botanical Illustrations and Kew."

Monday, Oct. 21, 8 p.m. Charles Buckley, Director, St. Louis Art Museum. "The Golden Century of Botanical Ornament in the Decorative Arts: 1750-1850."

Tuesday, Nov. 5, 8 p.m. Gertrude Grace Sill, South Port, Connecticut. "The American Artist as Naturalist."

Tuesday, Nov. 19, 8 p.m. Henry Evans, California Print Maker. "Making Botanical Prints in Color."

For this last event, Mr. Evans' speech will also be the opening of a show of some 40 or 50 pieces of his original art work. Also, at this time, a sales table will be set up so that the public can buy copies of his prints.

Volume LXIII Number 8
October, 1974

MISS SALLY SCHILLER NAMED EXECUTIVE SECRETARY OF MEMBERS OF THE GARDEN

The appointment of Miss Sally Schiller as Executive Secretary of the Members of the Missouri Botanical Garden has been announced by Dr. Peter Raven, Director of the Garden.

Miss Schiller, a resident of Richmond Heights, Mo., will direct the activities of the Garden's membership and administer its development program. As Executive Secretary she serves as an officer of the Women's Executive Board of the Garden. More than 5500 persons belong to the Members organization.

Before joining the Garden staff, Miss Schiller was Manager of Women's Sales Development for the St. Louis District of American Airlines. The first person to be named to the position, she coordinated fashion functions related to the airline and administered training and promotion programs to encourage more women to use air travel. Miss Schiller has also served as a foreign travel consultant for the American Express Company and has worked in hotel sales management.

A native of St. Louis, Miss Schiller received the Bachelor of Science degree in Fine Arts from Maryville College. Her major was in music, and subsequently she was associated with the St. Louis Municipal Opera. Her professional memberships include the Women's Association of the St. Louis Symphony Society, the Maryville College Alumnae Association, and the Women's Advertising Club.

ANNUAL PLANT SALE OCTOBER 5 THROUGH 9

The Garden's annual plant sale will be held Oct. 5-9, Saturday through Wednesday, in the Floral Display House. Hours are from 9 a.m. to 5 p.m.

This year's sale has been extended from one to five days to allow those who cannot make it to Saturday sales to shop on a more convenient day. The extended sale should relieve some of that "mad house" rush all of us have experienced during past annual sales.

Plant materials for the sale have been coming in since last June, and more are on the way. In addition to buying plants for the sale, the Growing Center staff has been propagating many of the more rare and unusual plants from the Garden's collections.

Plants for sale will include:

ORCHIDS — A good supply of *Cattleya* hybrids will be available. Also offered will be *Paphiopedilum* (ladyslippers) and *Dendrobium aggregatum jenkensii,* an unusual miniature orchid we imported from India that grows easily in the house and has nickel sized yellow flowers in early spring.

FERNS — These will include birdsnest fern, rabbit's foot, squirrel's foot, Holly fern, and a limited number of unusual *Polypodium* species. Come early if you want these. We should also have three selected varieties of Boston fern.

CACTI — Many of the more common types plus a few unusuals will be for sale. Several large plants collected in the wild will be available at a reasonably low price.

OFFICE PLANTS — We shall have a very good selection of medium to large plants suitable for the average office. Types will include *Dracaena, Ficus, Clusia,* and Palms.

SMALL PLANTS — Small house plants from the Growing Center's usual varied collection will be available, including miniature African violets, Episcias, Zebra plants, Resurrection Ginger, Pink Powder Puff and Hawaiian Heather.

UNUSUALS — For sale also will be large pots of hard-to-find begonias, three varieties of miniature *Hoyas, Cissus discolor,* and miniature *Anthuriums,* and other unusuals.

Discount for Garden members will be 20% this year instead of 15%. Non-members will be given a 5% discount. Please bring your own boxes.

David Balster
Superintendent of the
Growing Center

A View From The Volunteers

By Susan Mayer
Gardener of the Experimental Greenhouse

'CLIMB INSIDE THE BIGGEST TERRARIUM IN ST. LOUIS'

Feel the dirt between your toes (and under your fingernails). Be a part of what you see.

The efforts of many people make the Garden more than just a garden. As more individuals participate in their own ways, the Garden becomes a place of greater individual beauty.

Whatever your interests, there are a variety of opportunities open to you throughout the year. Right now the Arboretum at Gray Summit, Missouri needs all kinds of people.

For someone who enjoys a quiet hike, there are trails which need to be checked periodically for overgrowth and any other problems. For gardeners, there is mowing, trimming, planting and pruning. Along different lines there are slide presentations and educational programs that can be developed. Historical research on the Arboretum property is awaiting the right person. For the photographer, a series of photographs need to be taken for the various photo stations throughout the Arboretum. On weekends, receptionists are needed at the entrance to greet and direct visitors. Inside the gate house there is a need for displays and illustrations which would give people a look at what the Arboretum has to offer. Tour leaders are needed for the woodland trails.

Groups or individuals can take part in these activities throughout the full week, on a continuing basis or once a year.

The Education Department, another branch of the Garden, is in need of help right away. They need a group of twenty people interested in teaching terrarium classes to school children. Mr. Kenneth Peck will hold special training classes for the teachers. You should get in touch with him immediately so that plans can solidify.

Three hundred people have volunteered 11,210 hours from Jan. 1 to June 30 of this year. Their efforts mark the beginning of a wealth of opportunity for community involvement making the Garden an even better place.

So if you want to teach, sell, guide, work in the library or herbarium, help with the birthday parties or just weed, there is a place for you at Missouri Botanical Garden. Ask for Anne Nelson, the chairperson of volunteers, when you call 865-0440.

IKEBANA GROUP SHOWS SUPPORT OF JAPANESE GARDEN

The St. Louis Chapter of Ikebana International, an organization concerned with Japanese culture, especially the art of floral arrangement, held its tea at the Garden this month. Above, Mrs. Walter Morris, the chapter's past president (right), presents to Dr. Peter Raven, Director, a check supporting the development of the Japanese Garden. Newly installed president, Mrs. Joseph Nieters, is at center. The St. Louis branch has more than 100 members and was the third Ikebana chapter established in the world.

EXHIBITION OF STUDIES BY ARTISTS FROM ROYAL BOTANIC GARDENS, KEW, ON DISPLAY THROUGH NOV. 10

"Artists from the Royal Botanic Gardens, Kew," an exhibition of botanical studies made at the world famous Kew Gardens in Surrey, England, will be presented at the St. Louis Art Museum Oct. 6 through Nov. 10 under joint auspices of the Museum and the Missouri Botanical Garden.

The studies date from the 18th century to the present. They have been lent by the Hunt Institute for Botanical Documentation, Carnegie-Mellon University, Pittsburgh, and by the Royal Botanic Gardens. Although some of the earlier artists may be familiar, the more recent illustrators are not as well known outside the botanic community.

A preview of the exhibition, for members of the Garden and members of the Museum, will be held Sunday, Oct. 6, from 5:30 to 7:30 p.m.

"Artists from the Royal Botanic Gardens, Kew" is on view in the Temporary Exhibition Galleries, on the lower level of the Museum.

OCTOBER GARDENING

By Robert J. Dingwall
Chief Horticulturist

All seeding and repairing of lawn should have been completed by the end of last month. About mid-October it is advisable to come in with a second application of a balanced fertilizer such as a 12-12-12. Keep the grass mowed fairly close at regular intervals so that it does not have a chance to mat. If the lawn work was not completed last month, get the new seed down as soon as possible – before cold weather.

Lawn areas seeded in early September are ready by mid-October for herbicides to control the weeds that have been growing this past year. Follow the directions on the herbicide label, applying the spray when there is little or no wind and keeping it away from tree, shrub and flower areas. For hard-to-kill weeds, use 2 4-D with Silvex. An application put down in mid to late October will be sufficient for the fall. Another application in early April next year may be necessary to eradicate weeds that have been missed, or to get weed seeds that start to germinate early next spring.

House plants that have been kept outside for the summer should be inspected now. Clean them thoroughly to make sure they are disease and insect-free. Use an oil-base spray to scale treat the soil. A good soil treatment is Sevin, to be used at the rate of a tablespoonful to a gallon of water; it should be watered in, in the place of a regular watering, to kill any insects in the soil. Allow the plants to remain out of doors for several days after using this. Plants that are straggly should be cut back and all repotting done immediately. Pot-bound plants should be taken out of their present pots, soil loosened around the base, and then potted into larger sized pots; it is usual to go from a 5″ to a 7″ pot, 6″ to an 8″ pot. (This is the diameter of the top of the pot.) Newly repotted plants should be left outside where it is cool, and out of the sun for several days to become acclimatized to the new soil before moving them indoors. Keep them moderately moist at all times.

Broad-leaved and narrow-leaved evergreens can now be planted on the homegrounds. Deciduous material is not put out until after the first freeze, which is usually in late October. In setting out new plants, make sure the soil is well prepared, well incorporated with organic matter, and the plants heavily mulched with 3 to 4 inches of mulch after the plants are put in. See that they are properly watered if rainfall is not adequate. Plants along the foundation need to be watered thoroughly and checked late in the month to make sure the soil has not dried out next to the foundation.

All fall bulbs should be planted now. Work in 3 to 4 pounds of bonemeal in the area where the bulbs are to be planted. If bulbs cannot be planted until late in the season, it might be advisable to mulch the area heavily to prevent the ground from freezing. Then, at planting time, the mulch can be removed and plants put in properly. However, it is better to plant as soon as possible so that the plants are well rooted before the onset of cold weather.

Bulbs for forcing should now go into the coldframe and be covered, first, with straw or hay, then with several inches of soil; they should be allowed to remain thus and kept moist until they start forcing, which usually occurs early in January.

Lily Planting

Lilies are best planted this month. The best varieties are dug when the lilies are dormant, usually in early October. Bulbs are usually shipped out in plastic bags in peat moss. It is important to plant the bulbs as quickly as possible. Holes should be 8 to 10 inches deep. If drainage is a problem, it is advisable to place 3 to 4 inches of sand in the bottom of the hole, laying the bulb in sideways and covering the bulb with sand, then filling in the balance of the hole with good garden soil. These planting areas should be mulched thoroughly to protect them from the cold weather. Lilies are ideal plants to use among shrubbery or in semi-shaded areas.

Poinsettia plants for flowering at Christmas should not receive any artificial light. This, in the average home, means moving them into a closet or covering the plant from 7 p.m. until 8 a.m. the following morning. Any small amount of light from a lamp in the house can delay flowering. Those who have poinsettias in a hobby greenhouse with outdoor lights nearby may need to shade the plants with a black cloth to keep out such light and insure flowering for Christmas. Plants should be kept in the dark during the nights until color begins to show. During the day, however, they should be given good light, preferably in an east or south window.

Dahlias and other summer flowering bulbs do not need to be dug until after the first frost, when the leaves are tinged with frost. They should then be carefully dug and allowed to remain outdoors, if the weather is fine, to dry off. Bulbs or corms are cleaned up and stored according to the usual procedures in a frost-free area where the temperature can remain fairly cool. Most do well in temperatures around 45° to 50°.

Hobby Greenhouses

The hobby greenhouse should now be operating at full capacity. Seedlings started earlier will now need to be watched carefully for proper ventilation and feeding. Do not over-fertilize. If weather is extra cloudy, withhold watering and feeding until the plants have a chance to dry out; they should not be overwatered.

Cuttings taken earlier will now be ready for potting and growing in proper containers in the bench. If space is limited, rotate plants for the best light.

All house plants will benefit from an occasional misting to assure humidity around them. Grouping several plants together will also increase the humidity. Should the atmosphere in the home be very dry, it may be advisable to place the plants on trays containing pebbles with water in the bottom. As the water evaporates, a higher humidity will be created around the plants. The increased moisture will be beneficial, particularly to ferns.

Chrysanthemums may still be dug if they are in bud or bloom. Water well a day or two before digging and then pot up in proper containers; leave them out of doors for a few days where it is cool and moist until they become established, then move them indoors or to other parts of the garden for added flowering.

Insect Control

Roses will still be flowering and, therefore, will need to be watched as far as insects and disease control is concerned. Watch particularly for fungus and blackspot, which can be controlled through regular spraying with benlate. Late in the month it is advisable to work in about one cup of bonemeal or superphosphate around each plant, to get ready for heeling up the plants for winter. If weather turns very cold, mulching can be started late in the month.

Many of the herbs grown outdoors and used during the summer months may now be potted and kept outside in a cool spot until colder weather comes; then they can be carried over in the coldframe, the greenhouse, or a cool kitchen window, and the herbs used for cooking during the winter season.

Many of the cooler vegetables can be grown in the coldframe which is closed at night, as necessary, and opened up during the day. Then, as weather gets colder, the coldframe may be covered with a blanket for extra protection especially on extremely cold nights. If a heating cable has been installed in the coldframe, its temperature can be regulated to keep he soil above freezing. These uses of the coldframe provide ideal ways to grow lettuce, radishes, spinach nd other vegetables indoors when they are not available in the garden.

CHRYSANTHEMUM – A POPULAR FALL FLOWER

The chrysanthemum is probably one of the oldest cultivated flowers and has become widely grown today. Because there are so many varieties, and homeowners can so easily grow them, this flower is not the "drawing card" for shows that it was 20 or 25 years ago.

Chrysanthemums come in many forms and various heights, ranging from very low cushion mums about nine inches tall to varieties that reach a height of five or six feet. The most popular colors are yellow and bronze, which predominate for Thanksgiving; red and white mums are in increasing demand for Christmas.

Many people grow chrysanthemums in the field, lifting them and potting them when they begin to show color. Mums can be hardened off by keeping them out of the sun – in a place that is relatively cool and moist – for several days after potting. They then can be placed anywhere for fall color. Most garden centers carry them at this time of year. They make ideal fill-ins throughout the garden area during autumn. Some varieties bloom in late August and continue until heavy frost.

Members had the opportunity this spring of getting the Masterpiece mums, which are a relatively new group. They grow to a height of nine to 15 inches, start to bloom quite early and flower through a very long period in the fall. These make ideal gift plants and provide, as well, a dash of extra color around the home.

The hardy varieties for overwintering can be difficult because they do not like "wet feet." To carry hardy mums over, lift the plants with as much soil as possible, setting them up on the ground in a well-drained area, placing the plants side by side. Do not mulch them; the mulch holds moisture. Another good way to carry hardy mums over is to overwinter the better plants in a coldframe, where you can control the soil moisture.

Potted Mums

Potted mums make ideal show plants in today's home or office, and they will last for several weeks if this procedure is followed:

Place the potted mum in a bright window and keep it moist at all times; do not permit the plant to wilt. While flowering and under good light, mums take copious amounts of water daily. Night temperatures should be lower; the plant may have to be moved to a cooler part of the house or to an outer porch where the temperature will drop as much as ten to 15 degrees. The plant should receive good light, although when in bloom direct sun is not necessary. Poor light will shorten the growing life of the plant.

DR. THOMAS CROAT, CURATOR OF THE HERBARIUM, RETURNS FROM PANAMA EXPEDITION

Thomas B. Croat, Curator of the Herbarium at the Garden, has just returned from six weeks of plant collecting in Panama. Since 1972 Dr. Croat has been in charge of the FLORA OF PANAMA Project, which was started at the Garden in 1943. This work, which is published in the *Annals of the Missouri Botanical Garden,* describes all the species which have been found in Panama.

Dr. Croat's most recent field trip to Panama is one of many he has taken during the past seven years in search of tropical plants for the Garden's herbarium. In all he has made nearly 28,000 collections, a large part of them in Panama. From this most recent trip he returned with 2800 herbarium collections and 200 living collections. Many of his collections in recent trips have been species of the aroid (Jack-in-the-Pulpit) family, with which he is actively working.

Dr. Croat describes his interest in the aroid family in this way. "The family is an interesting one, with members which may be aquatic, terrestrial or epiphytic. Some are pollinated by large slow-moving beetles or flies which become trapped inside the flower structure and crawl around pollinating the flowers in an attempt to escape. They are easy to catch but are very strong and can chew right through thick plastic. Other species of aroids are pollinated by small, shiny, fast-flying bees which are apparently attracted to and collect scent compounds found on the inflorescence. In the process they pollinate the flowers. The family is a difficult one to understand because of its immense variability in form. To understand the family it is almost essential that plants be brought into cultivation and studied throughout all phases of their growth. Fortunately most species in the family are very easy to bring into cultivation and often make very attractive ornamentals. Already the Garden has the world's finest living collection of Central American aroids."

Highlights of Trip

When asked to describe the highlights of his most recent trip, Dr. Croat replied: "It was fantastic! I visited many parts of the country to collect for the herbarium and to collect living material of aroids, but at least two trips were noteworthy. One which I took in the Garden's new 4-wheel-drive vehicle took me to rich virgin rain forest on the wet Atlantic slope in Veraguas Province. This region is 450 to 550 meters in elevation and is a virtual paradise for the plant collector.

"Because I was the first botanist to reach the area," he continued, "it would not have surprised me to find a new species or two, but by the second day I lost count of the suspected new species. I found two new species of *Anthurium* growing on the same rock in the Rio Dos Bocas (Two-Mouthed River)! Needless to say, I was very disappointed when I returned to the Canal Zone with about 600 collections and most of them were destroyed by a fire caused by an electrical short in the plant dryer.

Dr. Croat carrying plastic bags of plants, climbing irons and palm inflorescences.

"Later I went back to Veraguas and recollected the area, finding all but two of the new species and many others. On that second trip I got much further up the Rio Dos Bocas which falls from about 800 meters to 300 meters in only a few kilometers. It is a wicked river, filled with large slippery stones, crevices and waterfalls. Though the going is tough, it is certainly worth the time because the area is literally lined with interesting vegetation. I encountered frequent waterfalls which were usually passable with no serious difficulty, but on one occasion I fell off a slippery cliff into a huge pool. While I clung perilously to the edge of the waterfall, holding my cameras over my head, I surveyed my predicament. I couldn't climb up and I couldn't go back with my cameras in tow so I balanced them on a 'dry' rock and swam to the lower edge of the pool, then traversed the cliff again, finally arriving at my cameras from the upper side of the waterfall.

"My other memorable trip," Dr. Croat said, "was certainly one of the highlights of my years of collecting in Panama. I arranged to go by helicopter into a gold exploration camp in Darien at the

Continued on next page

Handcrafted ceramic fungi, by Mrs. Gene Williamson, above, of the Department of Botany at Miami University in Oxford, Ohio, are on display through October in the Rare Book Room of the Lehmann Building. The exhibit is open to the public on Tuesdays and Thursdays from 9:30 a.m. to 12:30 p.m.

At least 133 species of fungi are shown; their colors include green, orange, red, yellow, and powder blue. This is the first time the exhibit has been on display in the St. Louis area.

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headwaters of the Rio Tuquesa only two kilometers from the Continental Divide. We flew for about half an hour over the most beautiful virgin forest I have ever seen at such close range, then suddenly we descended into a huge hole in the canopy to the gold mining camp. Since a chopper must stay below the clouds, it is easy to get lost because the clouds often touch the tree tops. On our way out we made three attempts to find the way before finally reaching our refueling point.

"The perimeter of the camp site on the Tuquesa was exceedingly rich," Dr. Croat said. "The first specimen I collected was an attractive new species of *Philodendron* with a bright red inflorescence. The region receives a great deal of rainfall and the streams are very steep. A downpour soon brings the level of the stream up very high. While I was there a shower brought the stream near camp up at about a foot a minute and so high that it nearly washed part of the camp away. From the Rio Tuquesa we flew to Cana near Cerro Pirre, an area of intense gold mining interest in the late 1800's and early 1900's. Those operations were once deemed unprofitable, but with the rising price of gold, the area is sparking new interest. This great interest in mineral exploration can be very good for botany because it means we can get to places by helicopter which otherwise would be measured in days by cayuca and foot travel."

FALL PROGRAMMING ANNOUNCED BY EDUCATION DEPARTMENT

By
Kenneth Peck
Education Department

The newest thing from the Education Department this fall is a shift in emphasis in the Saturday morning program. Initially, this program was intended for children, but over the years numerous parents and group leaders have enjoyed participating in the many class activities offered. It seemed reasonable, therefore, to present this program to families — parents and their children, grandparents and grandchildren, and even uncles with nieces and nephews. In the event that parents would be unable to attend, children 7 to 15 are as welcome as they have always been.

New in the fall list of courses for adults is "Dyeing With Plants" which is going to be given by Pauline Meyer. Miss Meyer has taught this art professionally and is well qualified to impart techniques that give results. "Edible Wild Plants" and "House Plant Culture" are being repeated again this fall in company with some "old timers" like "Plant Propagation from Cuttings" and "Winter Botany." People interested in obtaining information about any of these programs are invited to call the Education Department between 9 a.m. and 5 p.m., Monday through Friday.

The new booklet of programs offered to area schools in 1974 and 1975 is being distributed to teachers. It has a record number of 36 topics for lectures, workshops, and tours at the Garden and at the Arboretum. These programs serve between 25,000 and 30,000 students annually.

A new series of Teacher Workshops has also been announced for the Cooperating School Districts of St. Louis County. These workshops are made possible by a grant from the County schools. They are offered over the school year for teachers in both elementary and high schools.

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MEMBERS PREVIEW PARTY
Fall Flower Show
Friday, Oct. 25,
5:30 p.m. - 7:30 p.m.
Cocktails, music, models
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PLANT DISEASE CLINIC TO BE HELD THURSDAY, NOVEMBER 21

Have mites invaded your African violets? Chlorosis yellowed the leaves of your azalea? Is your oak galled?

Present your problem at the Garden's second Plant Disease Clinic on Thursday, November 21, in the auditorium of the Lehmann Building. The program runs from 10:30 until 2:00 p.m., with a lunch break between noon and 1:00 p.m. Because the clinic is open to the public, entrance is at the Main Gate where admission is $1 for non-members. Lunch may be purchased at the Snack Bar in the Floral Display House, or participants may bring sack lunches. Free coffee will be served.

This will be the Garden's second Plant Disease Clinic. Experts on hand to discuss and clarify controls for various types of diseases will be Dr. Robert Goodman, Professor and Chairman of the Department of Plant Pathology at the University of Missouri Columbia; Dr. Larry Millikan, pathologist in the department; and Rudy Zuroweste, area Horticultural Specialist in the University's Extension Department.

Attention will focus on problems evolving from the growing of plants in the home to concerns of the greenhouse grower, according to Robert Dingwall, Chief Horticulturist at the Missouri Botanical Garden. In regard to insects and diseases, discussions will concern the culture of plants.

Not only individuals but commercial growers are advised to present their problems to top plant pathologists at the clinic. Diseased plants will be examined by microscope, if necessary, and prescriptions given for treatment and cures.

"I am sure that this year's clinic will generate increased interest in plant pathology in the St. Louis area," Dingwall said. "The Garden has a significant role to play in disseminating information on plant diseases and cures, and participation by expert faculty from the University of Missouri enriches our service to the community."

GROUND BROKEN FOR JAPANESE GARDEN

Dignitaries Participate in Historic Ceremony

The turning of shovelfuls of earth by three dignitaries at the site of the future Japanese Garden, on Tuesday, September 24, not only marked the official start of construction on the 10-acre project in the southwestern part of the Garden.

The breaking of ground by the Mayor of Suwa, Japan; the Mayor of St. Louis; and the President of the Garden's Board of Trustees also symbolized a shared commitment to an undertaking that will introduce to the St. Louis area an art form entirely new to the center of the nation.

Mr. Setsuji Iwamoto, the Mayor of Suwa, Japanese Sister City to St. Louis, praised the creation of the new garden and announced his city's gift to it of a large, stone, snow-viewing lantern, the *yukimidoro,* essential to the garden's overall design.

Acclaiming the Suwa commitment, Mayor John H. Poelker of St. Louis, who is also a Trustee of the

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Garden, affirmed that the "growth of Shaw's Garden, as evident in the construction of a Japanese Garden, parallels the growth of the city of St. Louis."

President of the Garden's Board of Trustees, Joseph H. Bascom, the third high ranking official to turn a spade of soil at the historic ceremony, declared the trustees' endorsement of the Japanese Garden as a major step toward implementation of the Outdoor Improvement Plan presented in 1972 by Environmental Planning and Design, Inc., of Pittsburgh.

The Board of Trustees, at its regular meeting of September 18, had authorized the beginning of construction of the Japanese Garden. Their action inspired the decision to hold the ground breaking ceremony on September 24 to coincide with the visit to the Garden of the Suwa Sister City delegation. Officials of Suwa and of the City of St. Louis, members of the Missouri Botanical Garden's Board of Trustees and their guests, and other dignitaries were transported to the construction site, then to the Climatron for cocktails, and, finally, to the John S. Lehmann Building for dinner.

Among distinguished guests present was Koichi Kawana, President of Design Associates, Inc., of Los Angeles (U.C.L.A.) One of the leading Japanese architects in the country, Professor Kawana was selected in 1972 to design the Japanese Garden by the St. Louis Chapter of the Japanese American Citizens League. The League made possible the first steps in the design of the new garden. Other groups offering support are the St. Louis Chapter of Ikebana International and the National Council of State Garden Clubs, Inc. Although no fund drive will be conducted to finance the project, Dr. Peter H. Raven is enlisting donations of persons and groups with a special interest in the Japanese Garden.

Excavation of the lake around which the new garden will be situated has already begun. This lake, constructed in 1908, will be increased to twice its size, with the addition of islands, peninsulas, and other landforms including large landscaped earth mounds immediately to the north of the lake. In and around the Japanese Garden hundreds of new trees (many being evergreens) will be planted along with acres of flowering cherries and other plants to provide a magnificent floral display each spring.

The Japanese Garden will remain, Dr. Raven said, essentially a natural area, with elements of Japanese design such as bridges, a tea house, stone lanterns, and small gardens of varying style displayed against a beautifully landscaped background. Eventually a waterfall, tumbling down over mossy rocks, will be an attractive addition.

Subsequent issues of the *Bulletin* will explain the age-old concepts of a Japanese garden which Professor Kawana has embodied in his design. Also to be examined in the series of informational articles will be the tradition of Japanese garden interest in the St Louis area dating from the 1904 World's Fair Continued focus on unique features of the new garden will relate it to the Master Plan for development of the Missouri Botanical Garden.

IDIOSPERMUM, ENDANGERED PLANT SPECIES IN AUSTRALIA, HAS GERMINATED FROM SEED AT GARDEN

While many strange plants are raised and displayed at the Missouri Botanical Garden, perhaps none is so unusual as the Australian strawberry-bush which recently germinated from seed received from Queensland. Not only is it unusual from a botanical standpoint, promising important scientific information as it grows older, but it is an endangered species in its native country. If current destruction of the Australian landscape prevails, this may turn out to be another case where an important plant species is saved from extinction by the interception of botanical gardens.

This plant was discovered in the early years of this century by the great German botanist Ludwig Diels who found a single tree from which he could get no more than a leafy twig and some flowers fallen on the rainforest floor. Even this scanty material was later destroyed, and for many years the species was known only from a sketch (Fig. 1) of a leaf and flower which had found its way to Australia.

Diels likened the plant to *Calycanthus,* the "strawberry-bush" of the southeastern United States, which is sometimes grown for ornament and has flowers smelling like strawberries.

Calycanthus is known by several species, none of them common. One is found in the southeastern United States, one in the southwestern United States and two kinds grow in China. The plant of *Calycanthus florida* now growing outdoors at the Missouri Botanical Garden is of considerable interest to visiting botanists.

In August, 1971, an Australian botanist, S. T. Blake, was called to the scene of the poisoning of

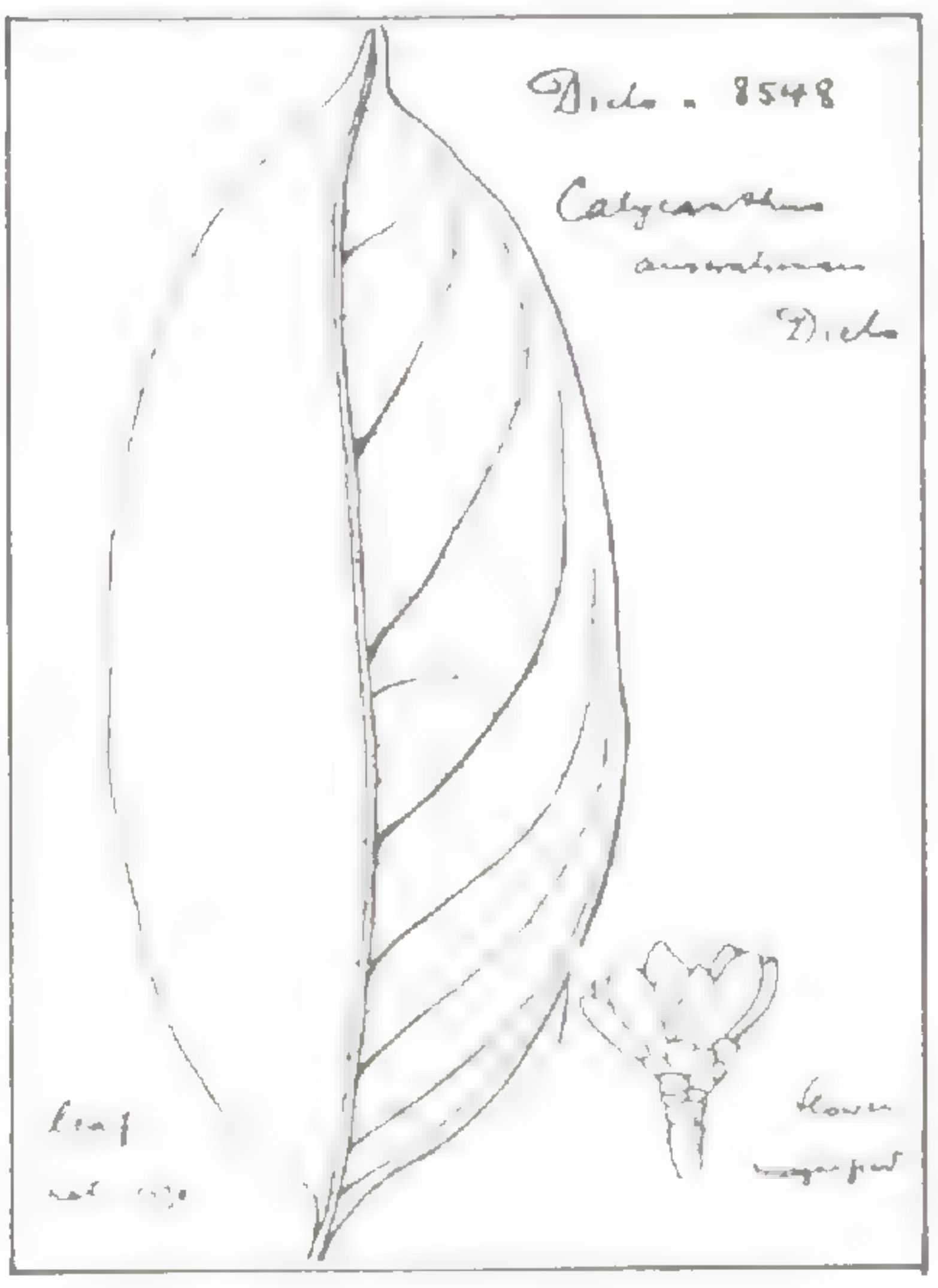

Fig. 1

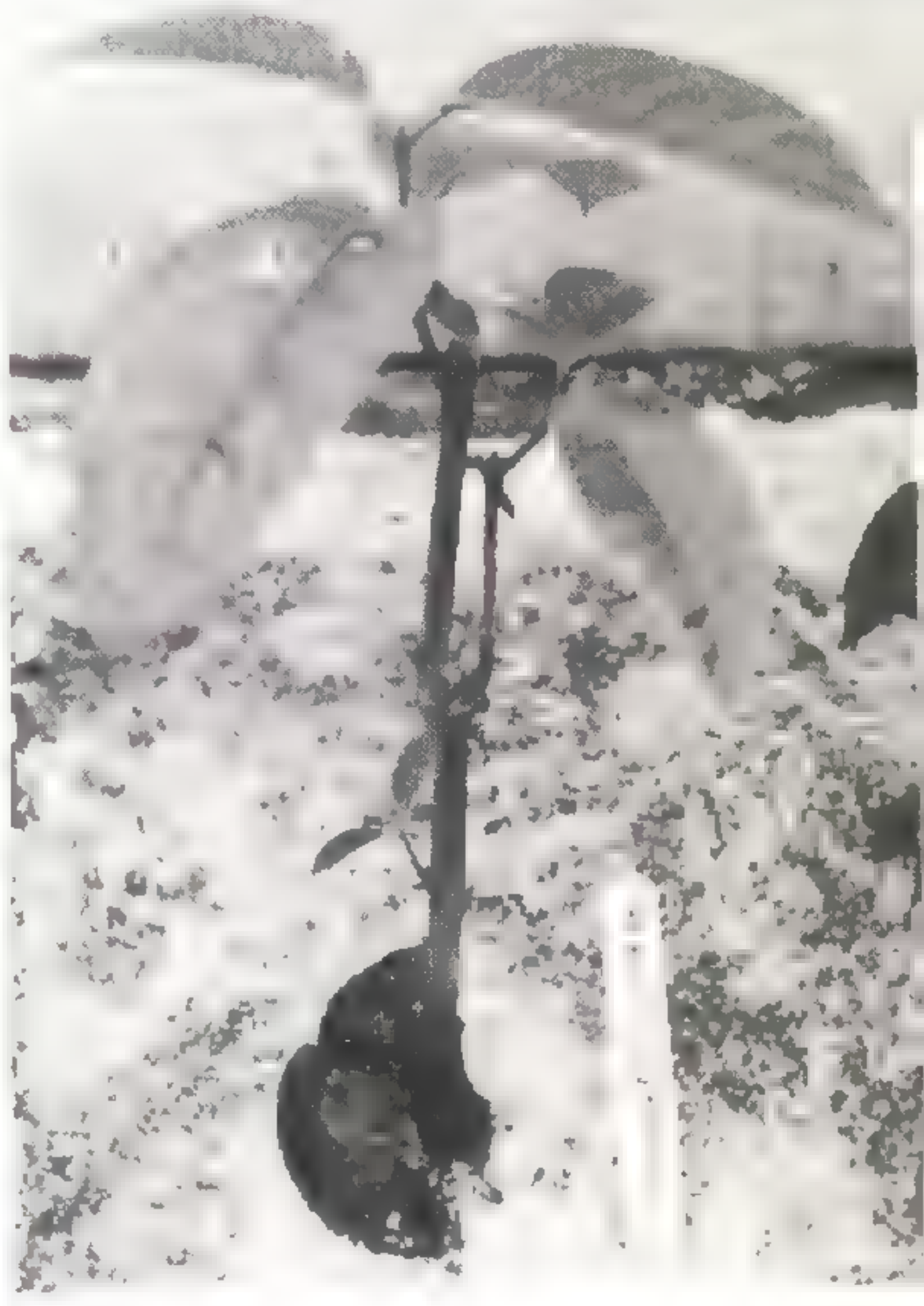

Fig. 2

CALIFORNIA PRINT MAKER HENRY EVANS TO GIVE MEMBERS' LECTURE ON NOV. 19

California print maker Henry Evans will lecture to Members of the Garden and their guests on Tuesday, November 19, at 8 p.m., in the auditorium of the Lehmann Building. The lecture, entitled "Making Botanical Prints in Color," will open a show of some 40 to 50 pieces of Mr. Evans' work. Tables set up after the talk will offer copies of his work for sale. The exhibit will be open to the public on weekdays only, from 9 a.m. to 5 p.m., through December 24.

His works have been exhibited at the California Academy of Sciences in San Francisco, the Field Museum of Natural History in Chicago, the San Francisco Public Library, the Royal Horticultural Society of London, the Hunt Botanical Library, and the Smithsonian Institution in Washington, D.C.

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four head of cattle north of Brisbane. The farmer had examined one of the dead animals and found large seed-like objects inside like those on the ground around a tree in his paddock. He had the tree cut down, but not before making a permanent specimen of a flowering branch. Blake was able to collect more of the seed-like objects from the ground, and he began a study of the flowering specimen. Soon after, other Australian botanists, perhaps alerted by Blake's interest, were able to collect more material of the species.

The flowers of Blake's plant resemble those of the strawberry-bush of our climes, but if Diels had seen fruits, he would not have considered the two plants to be close relatives. The fruit is a hard ball about two inches across containing one or two seeds. Lying on the forest floor, the fruit covering and seed coat decay to reveal one of the most unusual structures known in the plant world. Four large, starchy cotyledons fit tightly together around a small bud which grows into the seedling and later the new tree. The objects found in the dead cattle were not seeds, but the cotyledons, or parts of seeds which had separated from one another. On other grounds, this plant must be classed as a dicotyledon, but it is actually 4-cotyledonous!

Blake's studies show that the Australian strawberry-bush is only remotely related to the northern *Calycanthus,* and he found it necessary to give it not only its own separate genus designation, but it had to be placed in a family of its own. Blake chose the name *Idiospermum* which means "peculiar seeded."

The two plants of *Idiospermum* at the Missouri Botanical Garden are now about 12 inches tall (Fig. 2). When they are larger, they will be placed in the Climatron. They will produce white buds from which will come flowers at first white but soon fading rose, red, purplish or brownish. And they will smell somewhat like roses and not like strawberries. Already the stems on our two plants have developed an attractive, smooth, reddish-brown bark.

In most parts of Australia, expansion of farming and ranching activities is increasing pressure on the stands of undepleted flora still remaining. Because of the hazard to livestock which may eat the seeds, farmers may be expected to go out of their way to eliminate whatever plants of *Idiospermum* they find. It may not be many years before this unusual plant disappears from the Australian scene forever.

Perhaps *Idiospermum* can be maintained in St. Louis at the Missouri Botanical Garden. Placed in the Climatron, it will be an interesting companion to the *Degeneria* tree which thrives in these conditions. *Degeneria* too is of special interest, as it in some ways represents a "missing link" in the evolution of primitive flowering plants. *Degeneria* is now an endangered species in its native Fiji, and in the near future it may be known only from plants preserved in botanical gardens.

Were it not for botanical gardens, many species of plants now extinct in their native lands would be lost to the world. Many of these are showy flowering plants, but some are now well known trees and shrubs of streets and yards in many parts of America. The gingko, the dawn redwood and the lost camellia of Georgia are all extinct or endangered in their native ranges but are now readily available from nurserymen. With man's great efficiency at destroying virgin or native vegetation, the number of kinds of plants being eliminated becomes steadily larger as long as the supply lasts. As the last refuges of rare and unusual species are disrupted, the need for rescue of worthwhile items of the disappearing flora is now greater than ever.

William G. D'Arcy
Research Botanist

English Garden Party

The 1974 Members Benefit, held September 20 and co-sponsored by Stix, Baer and Fuller, was, as the British say, a "smashing" success. 840 persons attended the gala, which was sold out weeks in advance. Proceeds will be applied to the development of the South Rose Garden.

George and Rose Smith, the Cockney pearly king and queen.

A parade by the St. Andrews Bagpipe Band of Kansas City preceded a show of chic fashions by Designers Bill Blass and Zandra Rhodes.

From left: Mr. Larry Schiller, representative of Lord Snowdon; Ms. Zandra Rhodes; the Earl of Snowdon and Mr. and Mrs. J. Arthur Baer, II.

Mrs. John Brodhead, Jr., Benefit Chairman, and husband in front of the Tower Grove House.

(Bottom row photos courtesy of Behrens-Unterberger, Inc.)

MEMBERS
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S

As your Executive Secretary, I welcome the opportunity to share with you the exciting news of our upcoming Membership Solicitation Drive.

During this month of November (and again in March of '75), we will conduct a strong campaign, by means of mail solicitation, to increase our Membership. As the Garden grows, so must our "family."

We are hopeful that our system will preclude the possibility of any present Member being resolicited; however, this *could* happen. If it does, please understand and bear with us.

Your support and help is of immeasurable importance. Our thanks.

Sally Schiller
Executive Secretary of the Members

* * *

The Missouri Botanical Garden benefit seemed to push the right magic button this year. We are extremely happy in one way, because one of the prime aims of the benefit is to be able to make as large a contribution as possible to the Garden. On the other hand, it became an embarrassment of riches to us because we had to turn down so many delightful people who wished to come.

Believe me when I say how sorry we are, as we would have loved to have accommodated everyone. However, we were limited by two factors: one, the size of the marquee (and we had the largest one available), and two, the number of guests the caterer could handle. The acceptances for our September 20th benefit came in so quickly after the invitations were mailed that we had to put people on our waiting list as early as September 4. We are very, very sorry that we could not accommodate all who wished to come. I hope you'll be joining us at other of our Members' functions throughout the year.

Dodie Brodhead
Chairman
English Garden Party
Members Benefit, 1974

* * *

Color photographs taken at the "Night at an English Garden Party" Benefit on September 20 are now available for individual purchase at Behrens-Unterberger Studio, 9716 Clayton Road in Ladue.

Member of
The Arts and Education
Fund of Greater St. Louis

JUNE HUTSON, One of 300 Volunteers

June Hutson is one of the seventy-five horticulture volunteers at the Garden.

In April of 1973, she began working in the perennial garden with David Schwaninger, once a week. As her excitement for horticulture grew she decided to go to school for further training and enrolled in the horticulture program at Meramec Community College that fall. During the cold weather June worked in the Climatron, and by spring of 1974 she was spending one day a week, taking care of the Mediterranean House. When the warm weather came she simply had to get back outside to the perennial garden but did not want to give up the work at the Mediterranean House. Solution? She volunteered to work at the Garden two days a week. Somewhere along the way she found herself in charge of all horticulture volunteers.

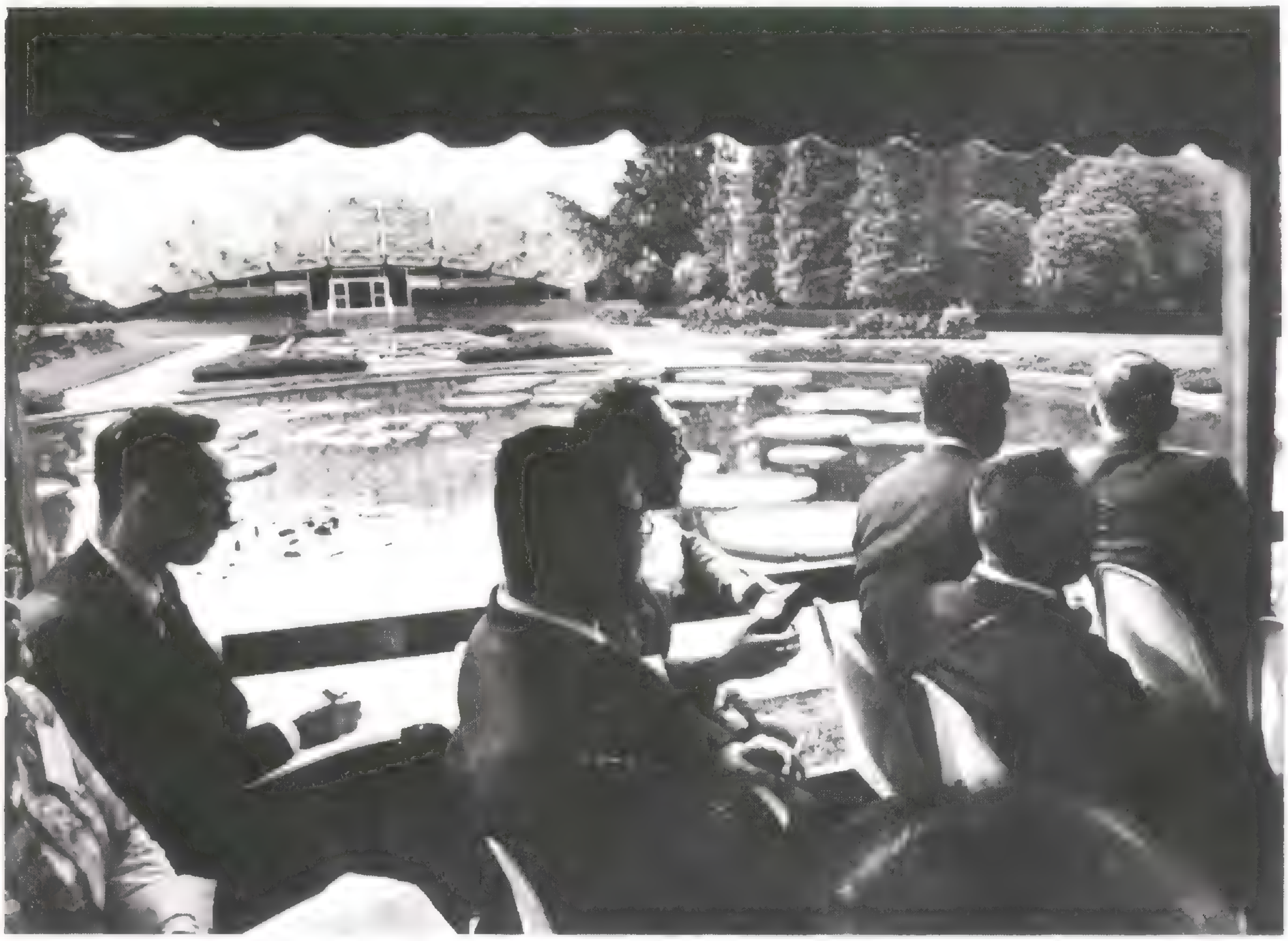
June says that she finds reward in her work by making the Garden beautiful for others. She thanks the staff for making her feel a part of the Garden; she loves her work and giving help where it is really needed. In addition, she finds the Garden a place to meet interesting people.

One day she was in the old rose garden with a new volunteer cleaning out the beds. They began to talk and June discovered that this woman was working for her doctorate. "Here we were," June said, "both down on our hands and knees pulling the same weeds. Emphasis is more often placed on people's differences than similarities. When it comes to weeds, or anything else, we are all just people who share a common interest in the Garden."

Susan Mayer, Experimental Greenhouse

A Day for the Japanese Garden

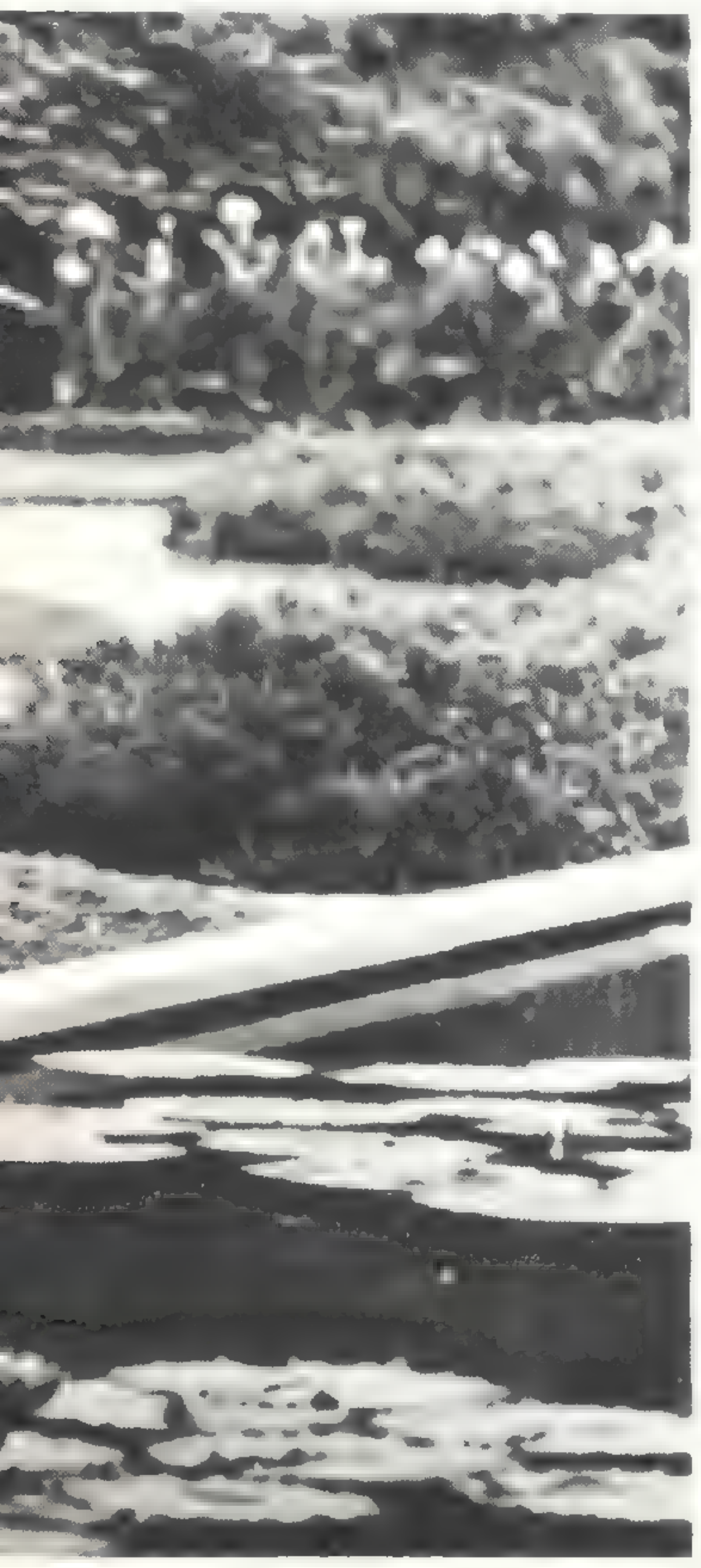
Activities that marked the beginning of construction of the Japanese Garden included a groundbreaking ceremony at the site, cocktails in the Climatron and dinner at the John S. Lehmann Building. Participants were dignitaries from Suwa, Japan and the City of St. Louis, and officials and trustees of the Missouri Botanical Garden and their guests.



At groundbreaking ceremony the Mayor of
gift of a snow-viewing lantern to the Japane
left, are: Mrs. Iwamoto; Joseph H. Bascom
Board of Trustees; the Hon. John H. Poelke
Director of the Garden.

Dr. Raven and Prof. Koichi Kawana, design
Angeles to attend.

yamoto, announces his city's
eter is at right. Seated, from
Missouri Botanical Garden's
uis; and Dr. Peter H. Raven,



Garden, who came from Los

Among the many dignitaries who delivered brief remarks at the dinner was, below, Missouri State Senator A. Clifford Jones

NOVEMBER

This is the month for the active gardener when gardening starts to come to an end. Final chores need to be done before the weather gets too cold in order to assure proper winter care. With the brilliant colors of autumn coming to an end and the leaves falling to the ground, it is important now to rake the leaves off the lawn areas and get them into the compost pile where they can be suitably composted for use in the garden next fall.

Build Compost

In building the compost it is important to put a layer of coarse material on the bottom, and follow next with a layer of leaves ten to twelve inches deep. The leaves should have been soaked thoroughly and firmed down, some old compost should be scattered on top of a layer to introduce decaying bacteria. Continue the application of several inches of coarse material, then a layer of leaves; repeat the watering and composting until the pile is approximately four to four and a half feet high. Leave a concave in the center for water to accumulate. The pile should be watered periodically if we don't get sufficient rain to keep it wet. If there is a chance that the pile may be scattered by playing children or roaming dogs, enclose it with wire or suitable fencing to hold it in place.

Leaves allowed to accumulate on the lawn can cause the lawn to die out. It is important to keep the lawn cut close as long as growth continues. Allowing lawn grass to mat is a good way of getting decay into the lawn. All final weeding should be done; weeds are ideal material to add to the compost pile.

Dig Now

Digging of the garden is important, and November, with its cool and invigorating weather, is an ideal time to do it. Dig lightly around the shrubs and remove any old wood or broken wood. Then scatter an application of super phosphate or bone meal lightly on top. A four to five inch mulch of material such as wood chips or compost will help to control the soil moisture and ground temperature, and supply nutrients to keep plants in good condition; using this method also reduces weeds next summer.

Bulbs not planted earlier must be put into the ground now in order to produce flowers next spring. Follow the recommended planting procedures. It is advisable to apply two or three inches of mulch over the planted areas that have gone in late. Lilies may still be planted; put the bulbs into well drained soil and on their side to prevent moisture from getting into the bulb center and causing rot.

Clean Up the Rose Garden

Now is the time to make a final clean-up of the rose garden. Remove diseased or decaying material; leaves that have had bacterial spot and fungus should be raked off the beds. Lightly work in approximately one cup of bone meal or super phosphate around each plant, then heal the plants up with good composted soil brought to a height of approximately one foot. Some pruning may be required to trim back long ends that are liable to break in the winter winds. However, general pruning is not recommended as it is felt that roses are much more likely to survive if little or no pruning is done until spring.

This is an ideal time to plant trees, shrubs and evergreens. Good supplies are available at local nurseries. Dig holes properly, make sure plants are well mulched and have a chance to produce a good root system before severe weather sets in.

Protect Plants

To protect plants that are set out, spray them with Wilt-Proof or protect them with a screen of burlap placed on stakes around the plants; allow a space of six to eight inches at the bottom for air to circulate through, and leave top open. (This will prevent them from winter burn, should they be planted in exposed areas.) Gutters around the house should be cleaned immediately so that water will not spill over and form ice on plants down below.

Chrysanthemums have now finished flowering and many have had the tops frozen. Cut the plants back to just above the ground; make a round diagram and check to see if any of them seem overcrowded. Such planning will aid in digging and dividing the plants next spring. If you have had a problem in overwintering the chrysanthemums, here are a few advisable solutions. Lift the plants and place them in a coldframe, or lift them from the ground, placing them on top with as much soil as possible attached. Make sure they are placed side by side. Later in the winter, when it gets very cold, apply a light mulch in between the plants. Placing them on top of the ground usually gives them sufficient drainage which helps them to overwinter successfully.

This is a good time to build and start a coldframe. Select a spot protected from the wind, preferably on the south or south-west exposure. A good size frame is approximately six feet long. Cover it with a storm sash or plastic. The soil used should be a good enriched garden loam. The cold frame is an ideal place to carry over many of the more tender plants and also a good spot to start lettuce and a few of the hardy vegetables for use during the winter months.

Plan for Next Spring's Vegetable Garden

This is a good time to lay out an area for a vegetable garden next year. The garden should be carefully dug and in all cases organic matter should be applied to the soil. With all the leaves around, it is advisable to double dig your garden. Take the first

PAINTINGS OF GARDEN SCENES ON DISPLAY UNTIL THANKSGIVING

Paintings of Fall scenes at the Garden by members of Wednesday morning classes conducted by St. Louis watercolorist, Mrs. Nicky Bottger, will be on display until Thanksgiving in the Museum Building. For sale at moderate prices, the paintings can be purchased on Wednesdays from 9 a.m. until noon.

This is the second year Mrs. Bottger has offered watercolor classes at the Garden in cooperation with the Continuing Education Division of Forest Park Community College. Enrollment in the six-week courses, conducted year round, is open to beginners as well as advanced students and teachers of art. Information on course dates, fees, credits and registration can be obtained by calling the Office of Continuing Education at Forest Park Community College, 644-3300, Extension 301.

Mrs. Bottger, a resident of Webster Groves, is a well known watercolorist whose works have been exhibited at the St. Louis Artists' Guild and at the St. Louis and Springfield, Missouri Art Museums. Her one man shows have been at the Junior League of St. Louis, Ralston Purina Company and The Lindenwood Colleges.

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shovel full to the opposite side of where the garden is going to be. Then dig out the next lot, or incorporate three to four inches of leaves in this, and turn the next soil over on top of this. Work the leaves again into the bottom part and continue through to the other side; then work three to four inches of leaves again into the top part. Leaves worked into soil which is allowed to remain rough over the winter will tend to break down and give an ideal base for a vegetable garden next spring. If the area has not received lime for several years, it might be advisable to give it a light application after digging is completed; also, an application of super phosphate will give sufficient nourishment to start the garden next spring. Soil allowed to stay rough and open to the winter weather will mellow and be in excellent condition for next year's new vegetable garden.

This is a good month to consider Christmas gifts for garden friends. Order them well ahead of time for Christmas. Visit the Garden Book Shop and select a good Garden Book for yourself.

Robert Dingwall
Chief Horticulturist

The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

M. P. CRONIN, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

DR. CHARLES A. HUCKINS APPOINTED CURATOR OF TROPICAL PLANTS

Dr. Charles A. Huckins is the Garden's new Curator of Tropical Plants. He joined the staff in August after having served a year as consultant for the New York City Department of Parks. He brings to his new position a combination of practical experience and outstanding academic achievement.

A native of Honolulu, Hawaii, Dr. Huckins received the B.A. degree in Biology from Brown University, Providence, Rhode Island, in 1963, and the M.S. and Ph.D. from Cornell University. His master's thesis, entitled "Flower and Fruit Keys to the Cultivated Ornamental Crabapples," capped a major study in Horticulture and a minor in Plant Taxonomy. For his doctorate, awarded in 1972, he majored in Plant Taxonomy and minored in both Horticulture, and Plant Anatomy and Morphology. The dissertation was "A Revision of the Section of the Genus *Malus* Miller."

Dr. Huckins conducted postdoctoral research at major herbaria and arboreta of Europe from February of 1972 to May of 1973. His work was financed by the William Frederick Dreer Award at Cornell University and the Druce Fund at the University of Oxford. He also served as a teaching fellow and research assistant in the Department of Floriculture and Ornamental Horticulture at Cornell. He has published studies on ornamental crabapples and the evaluation of woody plants for landscape plantings.

DONORS SOUGHT FOR LIBRARY ITEMS

Three important items have been offered to the library in recent weeks if sufficient funds can be raised to purchase them. The first of these items is a limited edition of *The Australian Flower Paintings of Ferdinand Bauer,* which contains a selection of full-sized color facsimiles of the paintings of one of the 18th and early 19th centuries' most outstanding botanical artists. This is the first publication of these paintings, important not only for their artistry, but for the record they provide of the Australian flora 175 years ago.

The second publication being offered to us is the first publication of three of the famous red books of Humphry Repton. Repton became one of England's most noted landscape architects, working on the grounds of many of England's finest estates. The three red books being offered to the Garden consist of reproductions of original manuscripts and drawings by Repton for Antony House, Cornwall; Attingham Park, Shropshire; and Sheringham Hall, Norfolk. All three of these estates remain today much as they were when landscaped by Repton almost two centuries ago.

The final item for which funds are sought is an original manuscript letter of Charles Darwin, the evolutionist. This 5-page letter is of major historical significance in that it discusses at length a number of fossil plants that were of great importance in preparing his book *The Origin of Species.*

Persons wishing to contribute toward the purchase of any or all of these important additions to our library should enclose their check made payable to the Missouri Botanical Garden and addressed to the attention of the Director or Head Librarian. All contributions toward these items are tax deductible.

James Reed
Head Librarian

- -

I wish to contribute $________toward the purchase of (check one):

____The Australian Flower Paintings of Ferdinand Bauer. (total cost $720)

____The Red Books of Humphry Repton (total cost $840)

____Manuscript letter of Charles Darwin, June 23, 1846. (total cost $850)

Name______________________________

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For further information write name and address below and send this notice to GUIDES, Education Department, Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110.

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1. Date of Filing: September 30, 1974.
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7. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None
8. The purpose, function and nonprofit status of this organization and the exempt status for Federal income tax purposes has not changed during preceding 12 months. Authorized to mail at special rates.
9. Extent and nature of circulation:

		average no. copies each issue during preceding 12 months	actual no. of copies of single issue nearest to filing date
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B.	Paid Circulation		
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	2. Mail subscriptions	6,360	6,360
C.	Total paid circulation	6,032	6,032
D.	Free distribution (including samples) by mail, carrier or other means	328	328
	Copies distributed to news agents, but not sold	None	None
E.	Total distribution	6,360	6,360
F.	Office use, left-over unaccounted, spoiled after printing	250	250
G.	Total **(Sum of E & F — should equal net press run shown in A)**	6,600	6,600

I certify that the statements made by me above are correct and complete.

(signed) M. P. CRONIN, Director of Publications

CALENDAR OF EVENTS - NOVEMBER 1974
MISSOURI BOTANICAL GARDEN

SUN	MON	TUES	WED	THURS	FRI	SAT
					1	2 10-11:30 a.m. Family Activity *Planting Bulbs*
ANNUAL FALL FLOWER SHOW FLORAL DISPLAY HOUSE THROUGH NOV. 10						
3	4	5 † 10 a.m.-12:30 p.m. Adult course *The Woodland Terrarium* *8 p.m. *The Am. Artist as Naturalist,* Aud. (Lecture)	6 † 1-3 p.m. Adult course *Winter Botany* *5-8 p.m. *CHRISTMAS GIFT BOUTIQUE* The Garden Gate Shop	7	8	9 10-11:30 a.m. Family Activity *Fun with Fruit*
FALL FLOWER SHOW, FLORAL DISPLAY HOUSE, 9 A.M. TO 5 P.M. DAILY THROUGH NOV. 10						
10 LAST DAY OF FLOWER SHOW	11 † 12:45-2 p.m. Adult course *Japanese Flower Arranging*	12 † 7-9:30 p.m. Adult course *The Woodland Terrarium*	13 † 1-3 p.m. Adult course *Winter Botany*	14	15	16 10-11:30 a.m. Family Activity *How to Make a Terrarium*
17	18 † 12:45-3 p.m. Adult Course *Japanese Flower Arranging*	19 *8 p.m. *Making Botanical Prints in Color* – (Lecture)	20 † 1-3 p.m. Adult course *Winter Botany* *HENRY EVANS EXHIBIT BEGINS*	21 10:30 a.m.-2 p.m. *PLANT DISEASE CLINIC* Aud.	22	23 10-11:30 a.m. Family Activity *Insectivorous Plants*
			PUBLIC EXHIBIT – 9 a.m. to NOON – WEEKDAYS – BOTANICAL PRINTS			
24	25 † 12:45-3 p.m. Adult course *Japanese Flower Arranging*	26	27	28	29	30 10-11:30 a.m. Family Activity *Winter Window Vegetable Gardens*
HENRY EVANS EXHIBIT, BOTANICAL PRINTS, WEEKDAYS ONLY, THROUGH DEC. 24, LEHMANN BLDG.						

*OPEN ONLY TO GARDEN MEMBERS
† ADVANCE REGISTRATION NECESSARY – CALL EDUCATION DEPT. – 865-0440

LECTURERS:
Nov. 5, Gertrude Grace Sill
Nov. 19, Henry Evans

Above activities are in the John S. Lehmann Bldg. unless otherwise indicated.

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September 1974

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Mrs. Fisher Chamberlain
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Ms. Darcy Ruth Stout
Mr. Richard V. Wagner
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Mr. & Mrs. John F. Watson
Ms. Gretchen G. Watts
Mr. & Mrs. Rogers E. Wohlberg
Mr. & Mrs. Homer F. Ziegler, Jr.

CONTRIBUTING MEMBERSHIP

Xpert Tree Service
(Marcus Alan Hirsch III
William D. Weinberger)

SUSTAINING MEMBERSHIP

Malcolm Miller

Special Birthday Remembrance:
For: Mrs. Hannah Wertheimer
From: Aimee Glaser Moss

50th Anniversary Remembrance:
For: Mr. & Mrs. James McClure
From: Mrs. Harold M. Baer

Memory of: Marilyn Wolfington
Mr. & Mrs. A.F. Boettcher, Jr.
Mr. & Mrs. Jack Bowers & Family
Mr. & Mrs. Jerry L. Dudding
Mr. & Mrs. Alex Logan
Mr. & Mrs. Walter Nowell
Plymouth Jr. High School Staff
Staff of Avery School
Mr. & Mrs. Charles W. Yates

In Appreciation for Mrs. Gladyn Ross:
Jamerson C. McCormack

Memorial Gift for: Mrs. Harry F. Thoms
From: Mrs. Rolf Toenfeldt

Memorial Gift for: Juanita Rimmey Helle
From: Mr. & Mrs. LeRoy A. Erickson

Memorial Gift for: Mrs. Vera Stephens
From: Mrs. Helen E. Fitzroy

Memorial Gift for: Mr. C. Jackson Spalding
From: Roma M. Lister

Memorial Gift for: Mr. Milton E. Hanebrin
From: Roma M. Lister

Memorial Gift for: Mr. Edward L. Loevo
From: Mr. & Mrs. Earnest R. Doty

Memorial Gift for: Julia M. Elliott
From: Mrs. Carl E. Grotpeter

Donation:
Dr. Robert C. Rosan

THANKSGIVING DISPLAY

in

The Climatron

November 26 – December 1

'A Tropical Feast'

Display of tropical fruits and other edible plant parts growing in the Climatron. Self-guided tour will be presented.

MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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Missouri Botanical Garden Bulletin

Garden Gate Shop

Volume LXIII Number 10
December, 1974

GARDEN GATE SHOP: GATEWAY TO THE BEST IN CHRISTMAS GIFTS

December is Christmas month. Christmas is presents time and that leads us straight to the door of the Garden Gate Shop. Many (the number is not known) have passed through this entrance into the brightly colored rooms filled with all sorts of goodies. Few know those who are behind the piles of cartons and stacks of paper busily creating this cheerful relaxed shopping atmosphere.

With the exception of a few special people the shop is run entirely by volunteers. Betty Sims, Sue Chalfant, and Margaret Baldwin are the co-chairpersons who do all the buying on their New York sprees twice a year. These three women also do the merchandising and stocking for the store. Seven days a week there are three or four volunteers who do the selling and tagging of all the items in the shop. While they may go unnamed here they do not go unacknowledged. Ranging in age from their teens to their seventies, these women give their personal touches to all those who come in to buy, whether they be tourists from out of town or local St. Louisans.

In the two and a half years that the expanded shop has been open, business has boomed. There is a larger selection than ever covering a wide range of price and interest. The store is known in the city for its extensive collection of botanical books, many of which are in paperback (very practical for the gardener to take outside).

The gifts in the shop focus on a botanical theme including a surprising variety of items. Glistening in the windows are leaded glass figures coloring all in the paths of their reflection. Cachepots brimming over with ferns are strategically located in corners and on sills so that you can't miss them. Stocking stuffers for all ages are nestled throughout the displays. Walter Brockman, a local artist, has his ceramic ornaments for sale, just waiting to be hung on their first Christmas tree. Wreaths decorated with brightly colored ribbons deck the walls. Needlepoint pillow kits are for sale along with a variety of handmade gifts made by Cape Girardeau ladies. I won't tell you any more of what is there. You will have to go see for yourselves.

Come in and browse. The Garden Gate Shop will give you all sorts of ideas that you might not have considered. It is open every day from 10 to 4:30 in the winter. To volunteers and shoppers as well, we at the Garden wish you all a very Merry Christmas.

Susan Mayer
Gardener, Experimental Greenhouse

MEMBERS
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O
S

As we approach the most joyous, sacred and wondrous season of the year, we rejoice that we have your support as a member of the Missouri Botanical Garden. We like sharing these beautiful grounds with you, doing things for you and with you.

With warmest best wishes for peace and happiness, this holiday season.

Jane Coultas, President
Executive Board of the Members
Missouri Botanical Garden

* * *

1975 will be a year filled with many special Membership activities. Our travel program will be an unusually diversified one, and we thought this an appropriate time to share our ideas and plans with you.

In **March** — a week's trip to the Canary Islands.

In **April** — a weekend to attend the Chicago Flower Show.

In **August** — a two-week European tour visiting Roumania, Turkey and Yugoslavia . . . "A Balkan Adventure."

In **October** — a week's trip, via New England, into Eastern Canada, including Quebec and Montreal.

Detailed information on all of the foregoing will soon be available (you already have the details on the Canary Islands Holiday), but we want you to be aware that interesting travel plans are now under way.

We look forward to an active, enriching and Happy Members' Year in 1975!!

Sally Schiller
Executive Secretary, Members of the Garden

CHRISTMAS SHOW ON DISPLAY THROUGH JAN. 12

The traditional Christmas Floral Show will open Saturday, Dec. 7, with the annual Christmas Party from 1 to 3 p.m. for children of Members of the Garden. The show of live Christmas plants will continue through Jan. 12 in the Floral Display House.

This children's party, sponsored by Kerr-Oberbeck, Inc., is appropriately titled "A Cartoon Christmas." Mickey Mouse, Donald Duck and Mary Poppins will join Santa Claus in distributing gifts. Other entertainment will be a puppet show and performances by a live brown bear and a chimpanzee. Refreshments will be served.

Holiday flowers to be featured in the Christmas Show are red, white and pink poinsettias, azaleas, kalanchoes, cyclamen, red and white chrysanthemums and the scarlet-red Schwabenland begonias.

From the Director

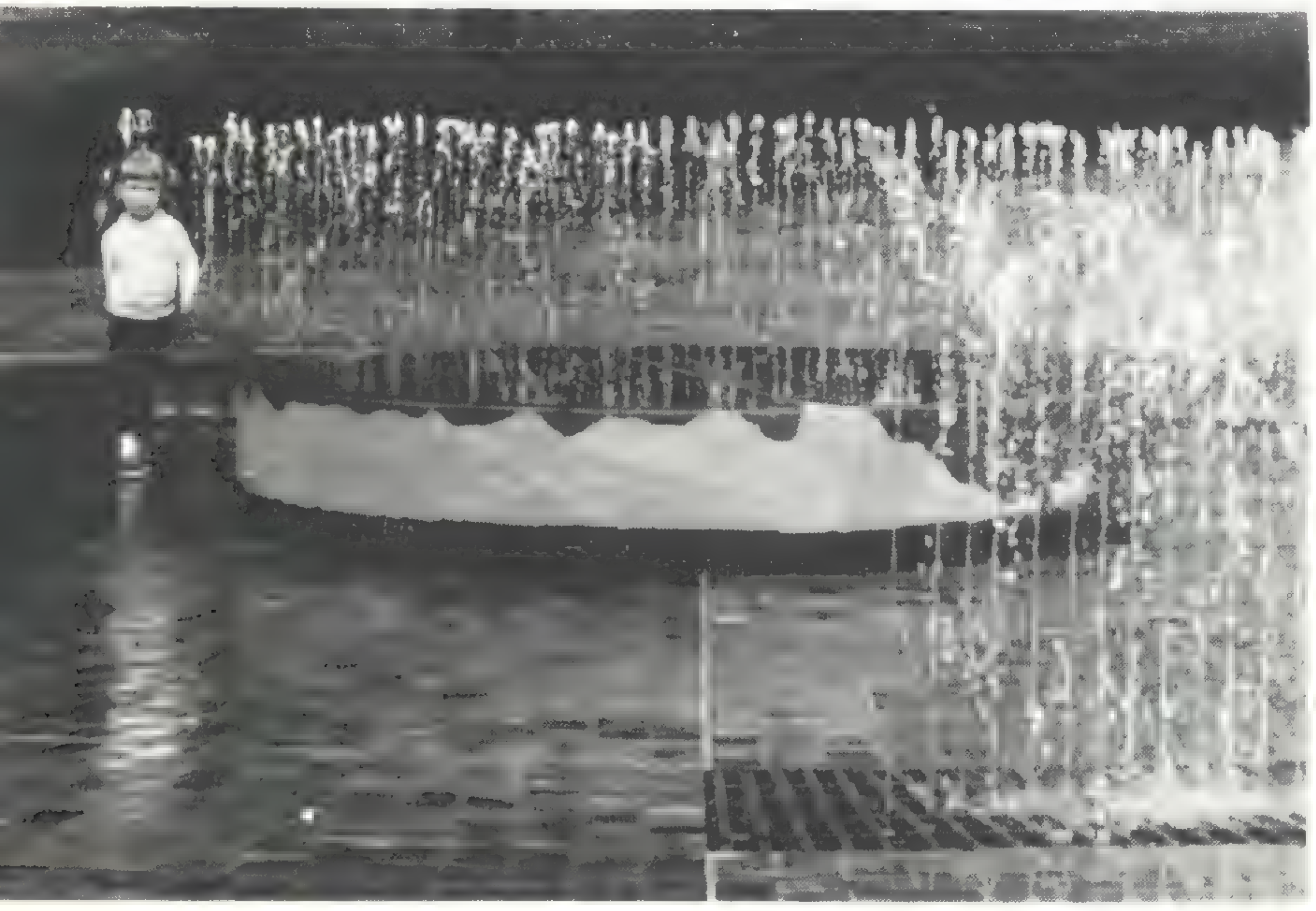
In 1974, the Missouri Botanical Garden's 115th year, our theme was gardening, gardens, and people. For the first time in 60 years, we embarked on a major outdoors improvement project, following the guidelines set down by Environmental Planning and Design in their 1972-73 Master Plan. The aim was to beautify and thereby increase the use and enjoyment of our entire 70-acre area.

Gardens and plants: The South Rose Garden was redesigned and greatly expanded, the beautiful and unique Shapleigh Fountain was constructed and dedicated in it. The generosity of the Shapleigh family made possible this most appropriate memorial to A. Wessel Shapleigh, longtime member of the Garden's Board of Trustees. His sister, Jane Shapleigh Kercheval, who passed away during the year, will be commemorated by a fine curving fountain just to the south, thanks also to the Shapleighs.

As the year ends, excavation has begun for the enlargement of the lake in the southwestern corner of the Garden and the construction of a landscaped series of mounds to the north. This work will be completed early in the summer of 1975, and then the installation of our Japanese Garden and Edgar Anderson Memorial Boxwood Garden will begin. We hope to complete both of the gardens by the end of 1976 as part of our contribution to the Nation's Bicentennial. Contributions for the many beautiful features in each, and for the fountains, arbors, and border plantings that will complete the Rose Garden, are being sought.

The Missouri Botanical Garden continued and expanded its role as a center for graduate study for the four area universities, with several students resident at the Garden. The John S. Lehmann Building is unquestionably the finest library-herbarium structure anywhere in the world, and should be a great source of pride to St. Louisans and especially to those who played a role in making it possible.

During 1974, Garden scientists studied and collected plants in almost every country of South America and Africa, as well as in Ceylon. Thomas S. Croat, our Curator of Phanerogams, brought back a valuable collection of more than 200 strains of living plants of the aroid family from Panama, many of which hold promise for introduction as houseplants. The common philodendron, a member of this family, was introduced as a houseplant by the Garden in the 1920's, and is now grown all over the world. John Elsley, our Curator of Hardy Plants, visited Japan and brought back hundreds of living plants and seed lots, a number of which will undoubtedly enrich the gardens of St. Louis in the future. These are under study now by the Garden's scientific and horticultural staff.



Your support has enabled the Missouri Botanical Garden to develop into one of the world's leading botanical institutions over the course of 115 years. Never has the institution been more active than at present; our membership has approximately doubled in the past three years. Hundreds of active volunteers are making an enormous contribution to our programs. Despite the fact that our endowment, which was adequate for all the Garden's expenses only 25 years ago, now yields less than a quarter of our budget; and despite the fact that, unlike most botanical gardens, we receive no direct tax support, we continue to improve our programs and record of service.

With your continued backing and interest, we will do even better; without it, we cannot perform adequately. Our grounds and maintenance crews are less than 20 percent of the size of those of comparable institutions, and are stretched to the limit in making possible the kind of garden of which we all can be truly proud. Please help us to continue our growth and to create an even finer botanical garden for your pleasure and education during 1975 and the years to come.

Peter H. Raven

Gardening in St. Louis

DECEMBER

This is the best time of year to catch up on the many and often most pleasant details of gardening there never seem time for in the planting season.

Read! Settle back and enjoy your own garden library. Acquaint yourself with the new books at the Garden Gate Shop and those offered on almost every publishers Christmas list especially for gardeners. Visit your public library and look over its stock of garden books – and don't neglect the older ones. The best of them contain a mine of good information and advice.

Subscribe to one (or more) good gardening magazines *(Horticulture,* published by the Massachusetts Horticultural Society is an excellent one). A subscription of this sort makes an ideal Christmas gift for gardening friends, as does a year's membership to the Missouri Botanical Garden.

Late planted trees and shrubs can still be mulched to control soil temperatures. Apply 4 – 5 inches around each newly set up plant, going well beyond the area dug up. Established rhododenrons and azaleas will benefit from mulch being added around them now, if it was not applied earlier. Stake newly set out trees to prevent them from blowing down in heavy winds. Hollies may be pruned this month to control shape and growth of the trees. Use the cuttings for holiday decorations in the house.

Mulch the late planted bulb and perennial beds to protect the plants from heaving due to heavy frosts. This is the last chance to add needed mulch to roses, if this was not done earlier. Evergreens planted in the past month or two should have a good mulch placed around them now to prevent frost from penetrating too low. Evergreens need to be able to take moisture up through the roots on mild days. Check mulched areas around all plants for mice; they chew the bark off young plants, causing them to die back.

Seed catalogues should be sent for now so that you will be able to place your seed orders early in the New Year.

Garden tools should be cleaned, oiled, sharpened and generally put in proper working order for the spring season.

Attend to Bird Feeders and Cold-Frames

Bird feeders should be in place and well supplied with food. Scraps of suet will attract the downy woodpeckers, nuthatches and others. The book, *Songbirds in Your Garden,* is a fine source of information on selecting bird-attracting plants and their care. It also provides detailed plans for building bird houses and advice on the best location for them.

Cold frames need special attention. In mild weather, airing the frames is important. Prop sashes up a few inches for an hour or so during the warmest part of the day. Water only if they become dry and only during warm spells in the early morning so that plants can dry off. Add extra covering in really cold weather if needed.

Watch for insects and disease on house plants, especially on new ones in the house. Spray as needed and mist with clear warm water occasionally to increase humidity. Scale insects (small brown or tan raised areas on or under leaves) need to be sprayed with an oil base spray. Volck is very good for this. Move plants outdoors on a warm day or into the garage to spray.

Take Care of the Home Greenhouse

The home greenhouse can now be run cooler than earlier in the year. A night temperature of 55-60° with a 5-10° rise during the day is sufficient. Ventilate as needed for fresh air. Don't overdo watering and feeding. Give plants all the light they can receive during these short days. For plants needing more light, six hours per day of extra growing light is best from 6-12 pm. A timer installed saves watching the clock. Watch for insect and disease problems and spray as needed to keep good control.

Hanging baskets are a way of utilizing space in the already full greenhouse or in the house where light is good. Watch watering carefully to make sure plants do not sit in water at any time.

Amaryllis bulbs may be started now. If these are established bulbs in old pots, two inches of soil should be removed from the surface and replaced with a good, rich mixture.

Fertilizing house plants should, for the most part, be suspended in dull weather.

Robert Dingwall
Chief Horticulturist

CHRISTMAS PLANT SALE DEC. 16-22

A Christmas Plant Sale will be held Saturday, Dec. 16, through Wednesday, Dec. 22, from 10 a.m. to 4 p.m. in The Plant Shop, new name for The Growing Center.

Plants for sale will include poinsettias, azaleas, cyclamen, kalanchoes, African violets, chrysanthemums, terrarium plants, glass gardens and assorted foliage plants ranging from $1 to $100 in cost.

Members will receive a discount of 20% on purchases. Plants must be picked up by 4 p.m. on Dec. 22.

A FLORAL CHRISTMAS, TOWER GROVE HOUSE, ECEMBER 7 THROUGH JANUARY 2.

This Christmas, Tower Grove House will be lecorated with plants and flowers in its usual festive /ictorian tradition. The display will be called "A loral Christmas at Tower Grove House." The custom f decorating homes on holidays is world wide and as been practiced for thousands of years. It is either pagan nor Christian, but rather a natural xpression of joy mingled with solemnity. Plants raditionally used as Christmas decorations are mostly vergreens; first, because they were the only ones vailable in the winter season; second, because from ncient times evergreens have been symbolic of eteral life. In this country the use of plants and flowers o adorn churches, homes, communities and schools uring the holiday season has long been a popular ustom. Fir, spruce, holly and yew are used to deck omes at Christmastime on the continent of Europe. n England, however, holly, laurel, mistletoe and osemary are favorites. In Mexico and the United tates, the poinsettia plant is also popular.

Tower Grove House is bringing into its decorations his year many of the traditional plants and the tories they tell. The House will be decorated on ecember 6 by the volunteer Hostesses and members f the Historical Committee.

The front door will have a laurel bay wreath, the rst plant used as a Christmas decoration. The odern practice of hanging laurel wreaths on the utside doors as a friendly greeting is an old Roman ustom. The wreath was their symbol of victory, lory, joy and celebration. The Christmas wreath eems to have been introduced here by settlers from reland and gradually became part of the American hristmas scene. Wreaths adorned with red ribbons ill be hung also at windows of Tower Grove House. s halls will be decorated with mistletoe, ivy, boxood and pine. The stairway will feature swags of rincess pine and red bows gracing the curving stairase, boxwood kissing bells and clusters of mistletoe. he mistletoe was sacred to the Druids. It was elieved to have all sorts of miraculous powers such s healing diseases, making poisons harmless, giving ertility to humans and animals, protection from itchcraft, warding off evil spirits and bringing good ck and blessings. A kiss under the mistletoe was terpreted as a pledge of love; an augur of happiness, ertility and long life. Ivy, at all times a favorite plant Britain, used to be kept in pots and displayed round the house not only at Christmas but year ound. Many pioneer settlers coming to the New orld brought pots of ivy with them.

The twin parlors of Tower Grove House will have he usual beautiful Christmas tree decorated with old rnaments, strings of popcorn and candles. Also eatured will be the poinsettia, a plant native to Central America but now widely displayed in churches and homes at Christmas because the flaming star of its bracts resembles the star of Bethlehem. The poinsettia was named after the late Dr. Joel Robert Poinsettia, United States ambassador to Mexico who brought the plant with him to his home in South Carolina where it flourished.

At a tea Nov. 12 honoring volunteers at Tower Grove House, Mrs. Charles Lamy, right, Chairman of the Garden's Historical Committee, presented pins to hostesses who served as volunteers for a year. Two of the recipients were Mrs. Alice Mortland, left, and Mrs. Ruth Hellstern. Also on the occasion Mrs. Harriet Moore Rodes Bakewell, who lived in Henry Shaw's Country House as a child, spoke on "Tower Grove House as a Home."

The dining room table will be set for the usual Christmas feast. The library will feature holly, the symbol of Christmas joy and merriment. Its appearance in the homes of old England opened the season of feasting and good cheer. When the earth turns brown and cold, the holly, with its shiny green leaves and bright red berry lends itself naturally to Christmas decorations as described in many traditional English carols.

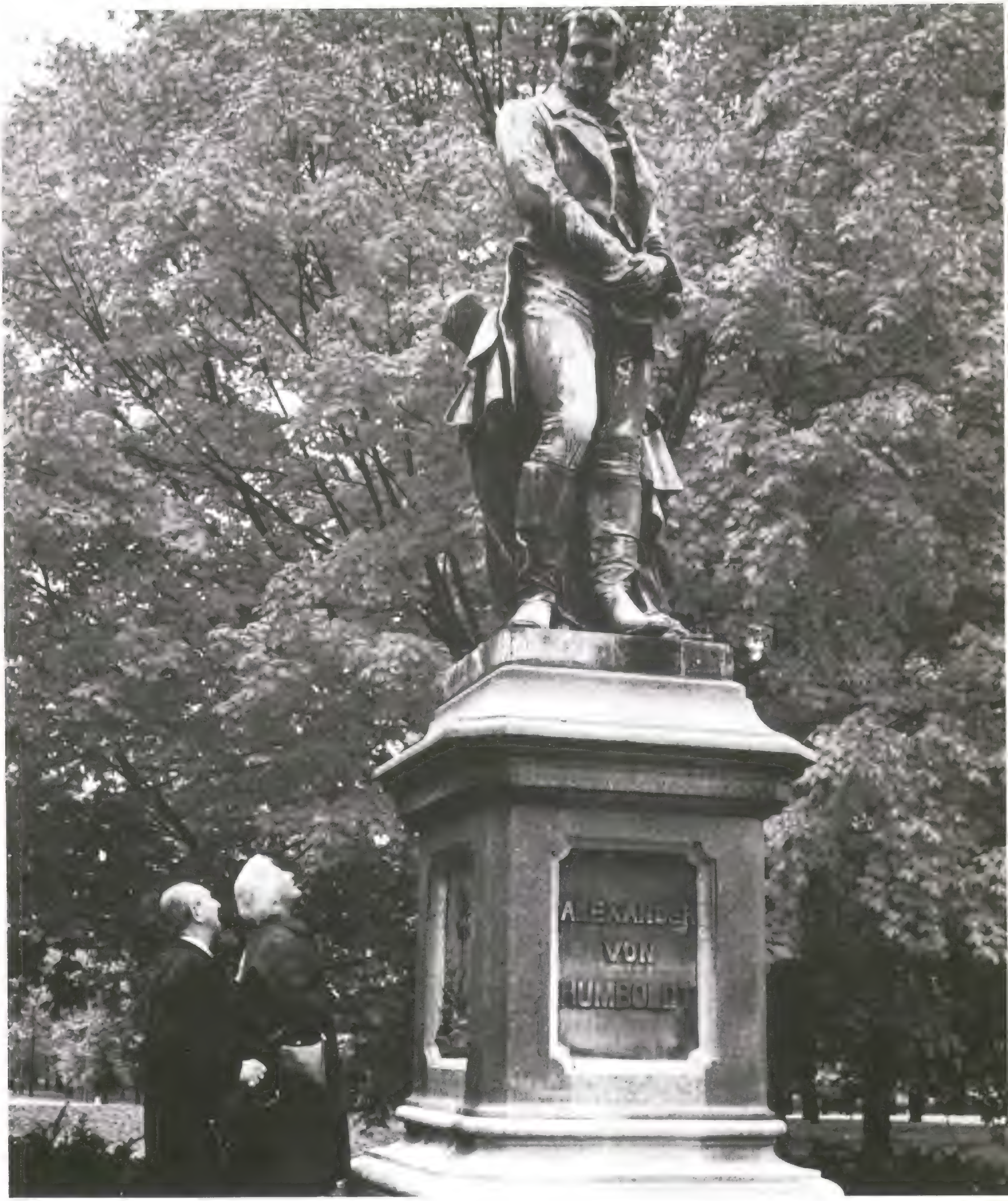
The kitchen of Tower Grove House will feature herbs, especially rosemary, which is native to the Holy Land and authenticated as a Biblical herb. The kitchen will also display an herb wreath.

A creche in Mr. Shaw's study will use the date palm. The famous English "Cherry Tree Carol" is based on a legendary service performed near the tree in connection with the Christmas story. In the original Oriental legend these trees are date palms.

The four upstairs bedrooms and sitting room will each display a flower in keeping with Christmas holiday plants: blooming azaleas, cyclamen, the Christmas chrysanthemum, Christmas begonia and Christmas rose.

Tea will be served to guests every afternoon at 2 p.m. The House will be open from 10 a.m. to 4 p.m. every day except Christmas.

Mrs. Edward W. Grace
Manager, Tower Grove House



A View from the Present: Recent visitors to the Missouri Botanical Garden, Dr. and Mrs. Rudolf von Miller of Munich, view the statue of German Naturalist Alexander von Humboldt in Tower Grove Park. The sculptor was Dr. von Miller's grandfather, Ferdinand von Miller II (1842-1929) The Humboldt monument was one of a number of von Miller works commissioned by Henry Shaw — including the lifesize marble statue of Shaw himself for his tomb.

Alexander von Humboldt, The Stature of a Statue

When Charles Darwin published the ORIGIN OF SPECIES modern biology began. The year was 1859, the same year as botany "began" in St. Louis as the Missouri Botanical Garden opened its gates for the first time. His views on evolution seemed to draw together the world of plants and animals. To him came accolades (and no little abuse) from every kind of person and from every corner of the globe. He emerged, before the century's turn, as its most prominent scientist.

Seven months after the publication of the ORIGIN, in not too distant Berlin, a scientist received a state funeral. It was not only a tribute to the fact that his intellectual prowess had served the world but also that he had served his country so well. Were Darwin not his competitor, he probably would have become "the" scientist of the 19th Century. His name was Baron Friedrich Heinrich Alexander von Humboldt.

St. Louis, Missouri in 1974, one hundred and fifteen years after Alexander von Humboldt's death, seems remote in time from Berlin in the era of the Prussian princes and its most illustrious savant. This is not true, however. If one visits Tower Grove Park (St. Louis), close to the area of lily pond and tennis courts, one encounters a broad stretch of roadway which, except for a few passing cars, appears like an isolated landing strip in a woodland. At each end of this expanse there stands a statue, the west end graced by William Shakespeare, the east end by Alexander von Humboldt. The Bard of Avon suggests the universality of the humanities, the other the depth and precision of science. Perhaps when Henry Shaw financed the construction of the two statues in 1878, he saw in Humboldt a worthy competitor for Shakespeare. Von Humboldt was the most distinguished member of Germany's Romantic School, seeking to idealize all knowledge including science. Never in scientific history did science and the humanities become more intimate. The crowning achievement of von Humboldt's prolific pen was his 5-volume *Kosmos* embodying the "Romantic natural philosophy's idea of a uniform conception of nature . . . Never has an natural scientist of modern times conceived a plan on a grander scale" (Nordenskiold).

Statue Selected for Tower Grove Park

There is no doubt that the selection of Humboldt's statue for Tower Grove Park paid deference to the German cultural traditions of South St. Louis. But there are more international overtones than that! Von Humboldt has been described as the "second discoverer of America," and before America entered the War of 1812, as the best known man in Europe, Napoleon excepted. In exploring Latin America for 5 years (1799-1804) he founded the science of plant geography. This, more than any of his numerous accomplishments befits his memorial being only a few hundred yards from the southeast corner of the Garden. That Garden scientists in today's jet age are collecting thousands of specimens from Panama to Peru, from Belize to Bolivia, for permanent deposit in the herbarium of the John S. Lehmann Building, is the fulfillment of an unwritten trust as symbolized by the statue. The magnificent illustrated tomes of von Humboldt and his colleagues in which almost five thousand plants from Latin America are described, are constantly consulted in the library of the new building.

In 1799, at the age of 30, von Humboldt, together with a French botanist, Aimee Bonpland, sailed from Spain to Venezuela. Their baggage included not only plant presses but astronomical and weather-recording instruments; von Humboldt's competence was not confined to botany; he was to lay the foundations of tropical meterology, describe with precision the structure and action of volcanos, including the definition of igneous rocks, trace the decrease in magnetic forces from the poles to the Equator, the decrease in mean temperatures as one ascends mountains. He was the first scientist to describe Peru's immense deposits of bird-droppings (guano), rich in nitrogen. He discovered the cool currents moving northward along the Pacific coast of South America toward Peru and Ecuador, these to be known as the "Humboldt Current." His studies on how heat, frost, oxygen etc. affect plants and animals make him one of the pioneers of ecology.

There was another side to the man, too. Despite his aristocratic upbringing and substantial wealth von Humboldt sympathized with the poor and oppressed. Like another genius, Paracelsus, who 3 centuries before studies "miners' disease" in Germany (the first treatise on any occupational disease), Humboldt, as a specialist in mining, concerned himself with the oppressed miners of Germany. When, later on, he went to South America he was revulsed when he witnessed the slave ships, with their stinking human cargoes, on the shores of northern South America.

Von Humboldt's Writings

There was no book which fired the imagination of the world in the first half of the 19th Century than von Humboldt's PERSONAL NARRATIVE OF TRAVELS TO THE EQUINOCTIAL REGIONS OF THE NEW CONTINENT DURING THE YEARS 1799 – 1804. In this he described how he and Bonpland explored the virtually unknown llanos south of Lake Valencia in Venezuela. Proceeding to

Calabozo they encountered a resident who had an electric machine with batteries; it seems coincidental that at the same place von Humboldt collected the famous electric eels. From San Fernando de Apuré where the llanos ended, they proceeded by canoe and portage to the Río Orinoco, a journey of 3 months. In less than a month they reached the Río Negro near the Brazilian border. At the base of a volcano, Cerro Duida, they watched in fascination, the preparation from a vine of an arrow-poison, curare. After a bout with typhus and dysentery the intrepid explorers returned to the coast of Venezuela. Hoping to sail to Vera Cruz, Mexico, they unfortunately were captured by a British privateer, rescued by a British sloop, and later transported to Havanna, Cuba by an American vessel. After a brief sojourn in Cuba, von Humboldt embarked for Colombia; from Bogota they ascended the Rio Magdelena and journeyed on foot to Quito, Ecuador, a trip of about 4 months. Here Humboldt and Bonpland climbed Mt. Chimborazo, the first individuals to climb almost to the summit (19,286 ft. of the 20,577 ft.), a feat which is commemorated on a bronze plaque adorning Humboldt's statue in Tower Grove Park. They also ascended nearby Mt. Pichinchá. This was followed by an expedition to the headwaters of the Amazon, a remarkable trek likewise commemorated on a similar plaque. Their next stops were Lima and Callao, Peru. Their last stop in Latin America was Mexico where they spent a year. As sort of a grand climax they visited President Thomas Jefferson in Washington and Monticello before embarking for home.

What drove a man of such intelligence to spend 5 years in the steaming jungles? It was to satisfy a thirst created by the unknown, to test a hundred hypotheses on nature's primeval proving grounds, to bring to the attention of the world the magnificence of the tropics. It was only a genius who could look at snow-capped Chimborazo and see it partitioned into radically different plant associations, as if one were running their eyes up a gigantic yardstick and finding new vegetational landscapes at every inch. He would have been appalled if he knew that in the next century man would be ravishing the soil and forests, the birds and mammals of these very jungles.

Life in the Jungles

In the jungles he saw life unemcumbered by so much of the trappings of civilization. Any temptation toward bigotry melted away when he, whose mother was a Protestant exiled from France for religious reasons, was helped at every turn by Capuchin, Franciscan, and Jesuit missionaries seeking God in primitive humanity. When he returned to Berlin he pleaded on behalf of the humanity of man and fought inhumanity with a sword-like pen.

How von Humboldt's eyes must have swept like those of some Appolline god over the verdant and virgin forests hugging the Andean slopes. His cheek must have caught the drippings from the moss-covered trees about him. The forest smelled sweet like some transformed garden of Araby. All nature stood in dynamic harmony, the majesty of each species adding to the mosaic of nature's most magnificent biological treasury: the tropical rainforest. With eager hands he and his companions gathered up specimens for far-away herbaria, little realizing that man was already beginning to ravage these slopes in the name of progress and civilization. Little did he realize that some of the plants luxuriating about him would soon succumb to the thoughtless grasp of man!

Humboldt, were he alive today, would take pleasure in knowing that forces are at work to save the rain forests and that botanists, many, if not the majority, being from America, are in the forefront of the drive. It is no exaggeration to say that the Missouri Botanical Garden has taken the leadership in botanical exploration of Latin America viewed in an over-all perspectus. This is not to detract from its obvious botanical contributions in terms of North America. Through its gathering of specimens, its cataloguing of the plant resources, its synthesis of ecological and biological information, the Garden is serving the cause of science and society. Its herbarium, library and living plant collections are not only a local and national resource but one designed for the world. This resource is an ideal – one which called for financial support in an age when the sustenance of an ideal relies not only heavily on heart but on pocketbook.

When one looks up at a statue, one is usually looking at a person admired by the world. The eleven foot figure of Alexander von Humboldt on an imposing basal support, is truly commanding. It conveys not only by virtue of sheer height the stature of the man but also his vitality.

The pedestal supporting the figure is of red granite with the statue cast in bronze. Between the pedestal proper and the figure are two bronze plaques: the north shows Mt. Chimborazo; the south, the valley of the Amazon. A third plaque which depicts Henry Shaw in bronze, is displayed in a case in the Henry Shaw Tennis Courts in the Park. The sculptor was the world-renowned Ferdinand von Miller II who received a commission of $25,000. Henry Shaw also commissioned von Miller to do the pedestal figure of Shakespeare as well as the well-known statue of Christopher Columbus in the Park.

Obviously Henry Shaw had a world-wide viewpoint, a tradition which his Missouri Botanical Garden is carrying on today. I have a feeling that if Henry Shaw had to choose one statue from the trio, Alexander von Humboldt would have gotten the nod.

John Dwyer
Research Associate

TRAINING COURSE FOR GUIDES, JAN. 7 – FEB. 25

A guide training course will be held on Tuesday mornings, Jan. 7 through Feb. 25, 9:30-12:00. Lectures will be given by staff members who will discuss such topics as the Desert House, Tropical Rain Forests, the Herbarium, Library and Special Collections.

This is a fascinating and rewarding volunteer opportunity.

Upon completion of training, each volunteer donates one day a week to guiding. For further information call the Education Department at 865-0440.

Kenneth Peck
Education Department

LIBRARY RECEIVES GIFT OF 'PLANT LORE OF SHAKESPEARE'

The Garden's library is the recipient of a gift presented at September's English Garden Party – a limited edition of Rosalba Towne's *Plant Lore of Shakespeare* recently published by The Frame House Gallery, Louisville, Kentucky. This volume contains over 70 full-color lithograph plates reproducing Miss Towne's original watercolor paintings, executed between 1888 and 1898, and later donated to the Botanical Museum of Harvard University. These works of art were originally painted to accompany the Rev. H. N. Ellacomb's *Plant-Lore and Garden-Craft of Shakespeare*, and the reproductions in the book are remarkably faithful to the originals.

ohn Elsley, left, Curator of Hardy Plants at the Missouri otanical Garden, inspecting plant material brought from entral Honshu, one of the four islands of Japan, with Garden lant Propagator, Tom Landzaat.

James Reed, Head Librarian, displays lithograph plate from 'Plant Lore of Shakespeare'.

Effective December 2, the new telephone number of the Missouri Botanical Garden will be 772-7600.

The Fall Flower Show Preview Party, sponsored by Jaccard's, attracted hundreds of Garden members to the Floral Display House on Oct. 25.

21st ANNUAL SYSTEMATICS SYMPOSIUM HELD AT GARDEN; OVER 300 SCIENTISTS ATTEND

Over 300 scientists from all parts of the country gathered at the Garden on Friday and Saturday, Oct. 18 and 19, for the 21st Annual Systematics Symposium. The topic for each year's symposium integrates botanical and zoological subjects in order to attract students of both plants and animals and to encourage an interchange of ideas among them. This year's topic was "Biogeography," the study of the distribution of living things around the world. Recent advances in our knowledge of past continental movements incorporated a third major field, geology, into this year's series of talks. A generous grant from the National Science Foundation allows the Garden to bring top-notch speakers to each Symposium.

The actual sessions took place all day Oct. 18 in a capacity-filled Lehmann Building Auditorium. However, many visitors came several days before and stayed several days after the Symposium in order to use the Herbarium and Library. Excellent assistance by Garden maintenance personnel assured a successful and smoothly run Symposium.

A knowledge of the past, based on geological data concerning fossils, former climates, and continental movements, provides a foundation on which to interpret existing distribution patterns. Conversely, current distribution patterns can provide a stimulus for further geological work or reinterpretation of accumulated geological data. During the Symposium, Dr. J. A. Wolfe, U.S. Geological Survey, provided data on the distribution of flowering plants during the Late Cretaceous and Tertiary, and Dr. M. C. McKenna, American Museum of Natural History, discussed fossil mammals and a North Atlantic land continuity during the Early Eocene. A synthesis of geological and biological data was used by Dr. D. I. Axelrod, University of California, Davis, in discussing the biogeography of broad leaved evergreen sclerophyllous vegetation.

Other Speakers

The usefulness of a knowledge of current distributions in construction classifications was discussed by Dr. R. F. Thorne, Rancho Santa Botanic Garden, California, in a paper "Angiosperm Phylogeny and Geography." Studies presented by Dr. G. F. Edmunds, University of Utah, concerning the biogeography of mayflies supported suggestions concerning a past connection between India and Madagascar — areas which are still poorly known geologically. Dr. D.B.O. Savile, Biosystematics Research Institute, Ottawa, discussed the use of rusts which are obligately parasitic on members of the saxifrage family to interpret the phylogeny and distribution of this family. A useful look into future interdependence of biological and geological science was presented by Dr. J. Cracraft, University of Illinois, Chicago, and the Garden's Director, Dr. Peter H. Raven, ably summarized the day's proceedings.

The Symposium concluded with an evening talk concerning the vegetation of the West Indies by Dr. R.A. Howard, Harvard, based on his long experience in those islands.

Marshall Crosby
Chairman of the Botany Department

Annals Copies Available

Copies of a special issue of the ANNALS OF THE MISSOURI BOTANICAL GARDEN can be ordered on the form below. To avoid billing costs, please send payment with order.

The volume, *25 Years of Botany,* contains a review of the progress in various fields of botany during the period following the Second World War.

ANNALS
Missouri Botanical Garden
2315 Tower Grove Avenue
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The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

M. P. CRONIN, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

CALENDAR OF EVENTS - DECEMBER 1974
MISSOURI BOTANICAL GARDEN

SUN	MON	TUES	WED	THURS	FRI	SAT
1	**2**	**3**	**4**	**5**	**6** Tower Grove House closed	**7** 1-3 p.m.* *Cartoon Christmas* (Party for Members' children) Floral Display House 10 a.m. – 4 p.m. *A Floral Christmas At Tower Grove House* 10-11:30 a.m. Family Activity. *American Hot Deserts*
Henry Evans Exhibit: Botanical Prints, 9 a.m. – noon, weekdays only, through December 24						
8 Christmas Flower Show begins	**9**	**10**	**11**	**12**	**13**	**14** 10-11:30 a.m. Family Activity *Making Christmas Cards*
CHRISTMAS FLOWER SHOW, FLORAL DISPLAY HOUSE, 9 A.M. TO 5 P.M. DAILY, THROUGH JANUARY 12						
A Floral Christmas At Tower Grove House – 10 a.m. – 4 p.m., daily – through January 2						
Henry Evans Exhibit: Botanical Prints, 9 a.m. – noon, weekdays only, through December 24						
15	**16** 10 a.m. – 4 p.m. CHRISTMAS PLANT SALE. Dec. 16-22 The Plant Shop	**17** PLANT SALE 10 a.m. – 2:30 p.m. †Adult Christmas Workshop	**18** PLANT SALE	**19** PLANT SALE 10 a.m. – 2:30 p.m. †Adult Christmas Workshop	**20** PLANT SALE	**21** PLANT SALE 10-11:30 a.m. Family Activity *Christmas Wreaths*
CHRISTMAS FLOWER SHOW, FLORAL DISPLAY HOUSE, 9 A.M. TO 5 P.M. DAILY, THROUGH JANUARY 12						
A Floral Christmas At Tower Grove House – 10 a.m. – 4 p.m., daily – through January 2						
Henry Evans Exhibit: Botanical Prints, 9 a.m. – noon, weekdays only, through December 24						
22 Christmas Plant Sale ends	**23**	**24** Henry Evans Exhibit closes	**25** Garden Closed today only	**26**	**27**	**28**
CHRISTMAS FLOWER SHOW, FLORAL DISPLAY HOUSE, 9 A.M. TO 5 P.M. DAILY, THROUGH JANUARY 12						
A Floral Christmas At Tower Grove House – 10 a.m. – 4 p.m., daily – through January 2						
29	**30**	**31**				
CHRISTMAS FLOWER SHOW, THROUGH JAN. 12						
A Floral Christmas At Tower Grove House – 10 a.m. – 4 p.m.						

**Open to Garden Members only*
†Advance registration necessary – Call Education Dept. – 772-7600

Above activities are in the John S. Lehmann Building, unless otherwise indicated.

NEW INDIVIDUAL MEMBERSHIPS

October 1974

Kelinda M. Anderson
Mrs. William C. Beall
Mrs. Rose Bini
Mrs. Geraldine L. Briscetto
Mr. G. A. Buder III
Mrs. Richard S. Bull
Mr. George G. Carmody
Mr. Andrew R. Coultas
Mrs. Mary G. Davenport
Miss Victoria D. Dry
Miss Clara R. Fieselmann
Dr. Alfred Fleishman
Ms. Nancy Gass
Miss Joan E. Geoghegan
Miss Corliss E. Gigax
Ms. Debbie Greenway
Mr. Arthur R. Grunmann
Mrs. James Hamilton
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Ms. Joan Kathrinus
Mrs. Sidney P. Kollme
Mrs. Emil F. Kuhn
Joan Leykam
Mrs. Miriam Lipsitz
Ms. Karen G. Lucas
Mr. A. C. Lusk
Mr. Jude McKay
Mrs. Ruth McMahon
Miss Elinor C. Mazzoni
Mrs. James Speed Medart
Mrs. Margaret Meinhardt
Mrs. Sally C. Moore
Mrs. Lester Wm. Morrell
Mrs. Elizabeth J. Newsham
Mrs. Mary C. Otto
Miss Nellie A. Rives
Mr. Michael K. Sadler
Mr. Tony Scaglione
Dr. M. C. Spoeneman
Mrs. Violette Taylor
Mrs. Barbara Toumayan
Mr. John A. Wagner
Miss Martha Waits
Miss Karen Wampler
Dr. Maxine Watson
Mr. Robert F. Widmann
Dr. Dolores P. Wolff
Helen Carolyn Wolken

NEW FAMILY MEMBERSHIPS

October 1974

Mr. & Mrs. John H. Abeln
N.J. Andrews & G.W.J. Beal
Mr. & Mrs. Fred Bedford
Mr. & Mrs. Marvin Braasch
Miss Dorothy & Mary Britton
Dick and Janet Butler
Mr. & Mrs. William S. Cassilly
Miss Marjorie C. Castro
Mr. & Mrs. John & Jeanie Cheeseman
Miss Mary Frances Chierek
Dr. & Mrs. M. Lawrence Cobb
Dr. Salvatore & Dr. Mary Conti
Mr. & Mrs. Rod Cooper
Dr. & Mrs. Victor G. Di Fate, Jr.
Mr. & Mrs. Gerald T. Dunne
Mr. & Mrs. Edwin H. Fedder
Mr. & Mrs. Rayomnd E. Felling
Mr. & Mrs. Hickman Y. Fisher
Miss Catherine & Helen Fitzhenry & family
Mr. & Mrs. L.P. Francis
Norma H. Gerhart
Mr. & Mrs. Robert C. Green, Jr.
Mr. & Mrs. T.W. Gregory
Mr. & Mrs. Louis V. Gutman
Mr. & Mrs. Arthur C. Haack
Mr. & Mrs. Thomas Hayes
Mr. & Mrs. Ronald E. Henges
Mr. & Mrs. Glen E. Holt
Mr. & Mrs. T. Edward Howard
Mr. & Mrs. James R. Higgins
Mr. & Mrs. Robert Hudson & family
Miss Amanda V. Hudspeth & Mr. Edwin G. Hudspeth
Mr. & Mrs. Morton D. Hyman
Mr. & Mrs. Fred D. Jackson, Jr.
Dr. & Mrs. Bernard Jaffe
Mr. & Mrs. Richard Carl Jensen
Miss Evah Johnson
Mr. & Mrs. Dale Johnston
Mr. & Mrs. Ed Keeven
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Dr. & Mrs. Richard B. Wilber
Mr. & Mrs. Hans Will
Mr. & Mrs. Stephen Winer
Mr. & Mrs. Michael Witunski
Mr. & Mrs. Robert B. Worley

TRIBUTES

October 1974

In Memory of Mrs. Al Wolfington
Crestview Jr. High School

In Memory of Jane Shapleigh Kercheval
Mrs. Paul Bakewell, Jr.

In Memory of Mrs. Leo Aaron
Eugeneia Henke
Rose Henke

In Memory of Mr. Howard E. Ridgway
Kikue S. and Alan S. Atkins

In Memory of Mrs. Dorothy D. Meyer
Mrs. Charles A. Brandon

In Memory of Mrs. I.D. Fales
Mr. & Mrs. H.M. Ross

In Memory of Mrs. Arthur B. Shepley
Eleanor & Henry Hitchcock

In Memory of Catherine Ravenscroft
Marian Marshall
Charles & Florence Terry
Mrs. E.R. Hurd, Jr.
Mrs. Charles A. Brandon

In Memory of Betsy Cantrell
Group of her friends
Mrs. Elizabeth Niemoeller

In Honor of 25th Anniversary of Mr. & Mrs. Littmann
Elsie S. Glik

With Love: Mrs. Frank Pelton
Katherine & Kitten Burg

The Clarence Barbre Memorial Fund
Mrs. S.G. Lodwick

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2315 Tower Grove Avenue
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Bulletin

The new telephone number of the Missouri Botanical Garden is 772-7600

JOURNEY TO JAPAN: GARDEN HORTICULTURIST RELATES HONSHU VISIT TO JAPANESE GARDEN PROJECT HERE

During a five week visit that I was privileged to undertake to parts of central Japan last autumn on behalf of the Missouri Botanical Garden, I was afforded many opportunities to perform tasks that hopefully will provide mutual advantages both to our own institution and to my many generous and hospitable Japanese hosts. My travels were restricted to central areas on the island of Honshu, the largest of the four major islands that constitute Japan, and a region which has a number of features of specific interest to ourselves in St. Louis. The mountainous province of Nagano is linked as the "sister state" of Missouri, while the city of Suwa, aptly termed the "Switzerland of Japan," is our own sister city. Finally, and of particular significance to my own visit, the climate of central Honshu is not dissimilar to that experienced in St. Louis, although the climatic extremes are not quite so great as we experience.

Lake excavation of Japanese Garden, December 1974.

John Elsley, left, Curator of Hardy Plants at the Missouri Botanical Garden, with Mr. Hirotaro Todoroki, Foreign Affairs Officer, Nagano Prefecture Government, at a botanical park near Togarkushi, Nagano.

Wherever I visited, considerable interest was shown in our own Japanese Garden project. I was privileged to meet Governor Nishizawa of Nagano Prefecture, and he expressed a desire to contribute in some form toward its eventual completion. The keen interest of the Mayor and city of Suwa has already been fully covered in a previous issue of our Bulletin and I cannot adequately express my gratitude to Mayor Iwamoto and his staff for the hospitality afforded me during a three day visit to their beautiful city, situated beside Lake Suwa in the highlands of central Honshu. Suwa, with a population of around 50,000, is a major production center for such precision instruments as clocks and watches in addition to being a popular center for winter sports. Kyoto, the ancient capital and cultural center of Japan, provided me with the opportunity of viewing the many classical gardens which have been developed over the decades throughout this "Garden City" of Japan.

The 'Garden City' of Japan

Sheltered on three sides by hills with thickly forested slopes, Kyoto possesses several major nature features which favor garden construction and de-

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February 1975

velopment. Apart from favorable topography, there is an abundance of water in the form of springs, streams and rivers, while constitution materials like stone are locally plentiful. Kyoto's ancient heritage is depicted in the wide range of garden styles, many indicative of philosophies held by the Japanese, particularly those associated with Zen Buddhism. Formal and informal designs are present, and in all cases the limited range of plants utilized together with the strategically placed stones are deeply significant. In all instances, I was tremendously impressed by the impeccable standard of maintenance in the various gardens I visited – a feature which is paramount for the desirable appreciation of such gardens. It was exciting to visit such informal "tour gardens" as the Katsura Detached Villa, the most famous garden of its kind and one which must be appreciated by the visitor as one strolls along the winding path strategically situated around the shores of a major lake. Our own Japanese Garden has been designed to be appreciated in this "strolling" manner, and I was greatly impressed by the entire concept revealed to me at Katsura.

The contribution made to western gardens by the native flora of Japan is probably greater than that of any other single country – with the possible exception of China. Because of similarity between our two climates I took the opportunity whenever possible of collecting as many living plants and seeds as possible. These were obtained from a number of different sources, especially from native habitats; a collection of *Acer* (Maple) seeds from the Nikiko area should be of particular interest. Other material was obtained from botanical gardens, private collections and nurseries. I was most impressed by the many nurseries I was able to make to visit, particularly those located in the Kawaguchi City area on the outskirts of Tokyo.

The Nurseries

Many of these nurseries tend to specialize in the production of a limited range of specific plant material, while others, although small in area, contain a wealth of plants calculated to thrill the heart of any plantsman! Of particular interest are those old established businesses which concentrate on the cultivation of native Japanese species, and I was fortunate to obtain some interesting plants from such establishments. We are especially grateful to Mr. A. Shibamichi, one of Japan's leading growers, who is providing us with a collection of interesting trees and shrubs for cultivation in St. Louis. It is noteworthy that, although the Japanese have such a wide range of unusual native plants, their traditional styles of gardening tend to utilize only a limited number of plant species.

In future issues of the Bulletin I shall expand more fully on specific items related to this intriguing visit. However, I feel certain that many of the personal links I was privileged to forge during my stay will be of mutual benefit for all concerned in the years to come. Construction of our own Japanese Garden has commenced with the excavation of the lake area and I can think of no more exciting a project for establishing mutual bonds of friendship between ourselves and our Japanese neighbors.

John Elsley
Curator of Hardy Plants

VOLUNTEERS NEEDED

Our unique volunteer program now has 400 active participants donating their time at the Garden in a wide variety of activities. Volunteer support directly helps our Garden achieve the excellence it deserves and leaves the volunteers with a tremendous sense of satisfaction. Some areas of the Garden are well staffed with volunteers due to the response to previous requests; however, other departments still need additional assistance. These areas are: Herbarium, Tower Grove House, the Arboretum, and Horticulture. Men and women are welcome, and your older teenagers may love helping us out during the summer months. We require three hours (minimum) of your time each week; you must be dependable, and have your own transportation. Why not join our team now!

For information, please return this request to me c/o the Garden and you will be contacted by telephone.

Mrs. Richard T. Nelson
Chairman of Volunteers

NAME ______________________________

ADDRESS ___________________________

______________________ ZIP __________

PHONE ____________ VOLUNTEER INTEREST

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M. P. CRONIN, Editor

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OFFICERS OF BOARD OF TRUSTEES ELECTED FOR 1975

The election of officers of the Garden's Board of Trustees for 1975 has been announced by Dr. Peter H. Raven, Director.

Named president of the 17 member board at its January 15th meeting was Tom K. Smith, Jr., group vice president and managing director of Monsanto Commercial Products Company, an operating unit of Monsanto Company. Robert Ringen Hermann, president of Standard Container Company, Inc., was elected first vice president, replacing Mr. Smith, and Daniel L. Schlafly, chairman of the Board of the Arkansas Beverage Company, was elected second vice president.

Mr. Smith is on the boards of directors of the Federal Reserve Bank of St. Louis; Clayton Federal Savings and Loan Association; Bayrock Fund, and the National Center for Resource Recovery. He is a board member of the Arts and Education Fund of Greater St. Louis, Loretto Hilton Theatre, Inc., the St. Louis Symphony Society and the St. Louis Municipal Opera. He also is a member of the executive committee of the United Fund of Greater St. Louis.

He succeeds Mr. Joseph H. Bascom, chairman of the board of Broderick and Bascom Rope Company, a subsidiary of Keystone Consolidated Industries. A member of the board since 1971, Mr. Bascom served as its second vice president in 1972. During his tenure as president (1973 and 1974), the implementation of the first stages of the Garden's Outdoor Improvement Program, based in the 1972 Master Plan, took place.

Mr. Hermann serves on the boards of Barnes Hospital, McDonnell Planetarium, the St. Louis Municipal Opera, and the St. Louis Symphony Society. He is past vice chairman of the United Fund of Greater St. Louis, and, since 1957, has been chairman of the Board of Directors of Muscular Dystrophy of Missouri.

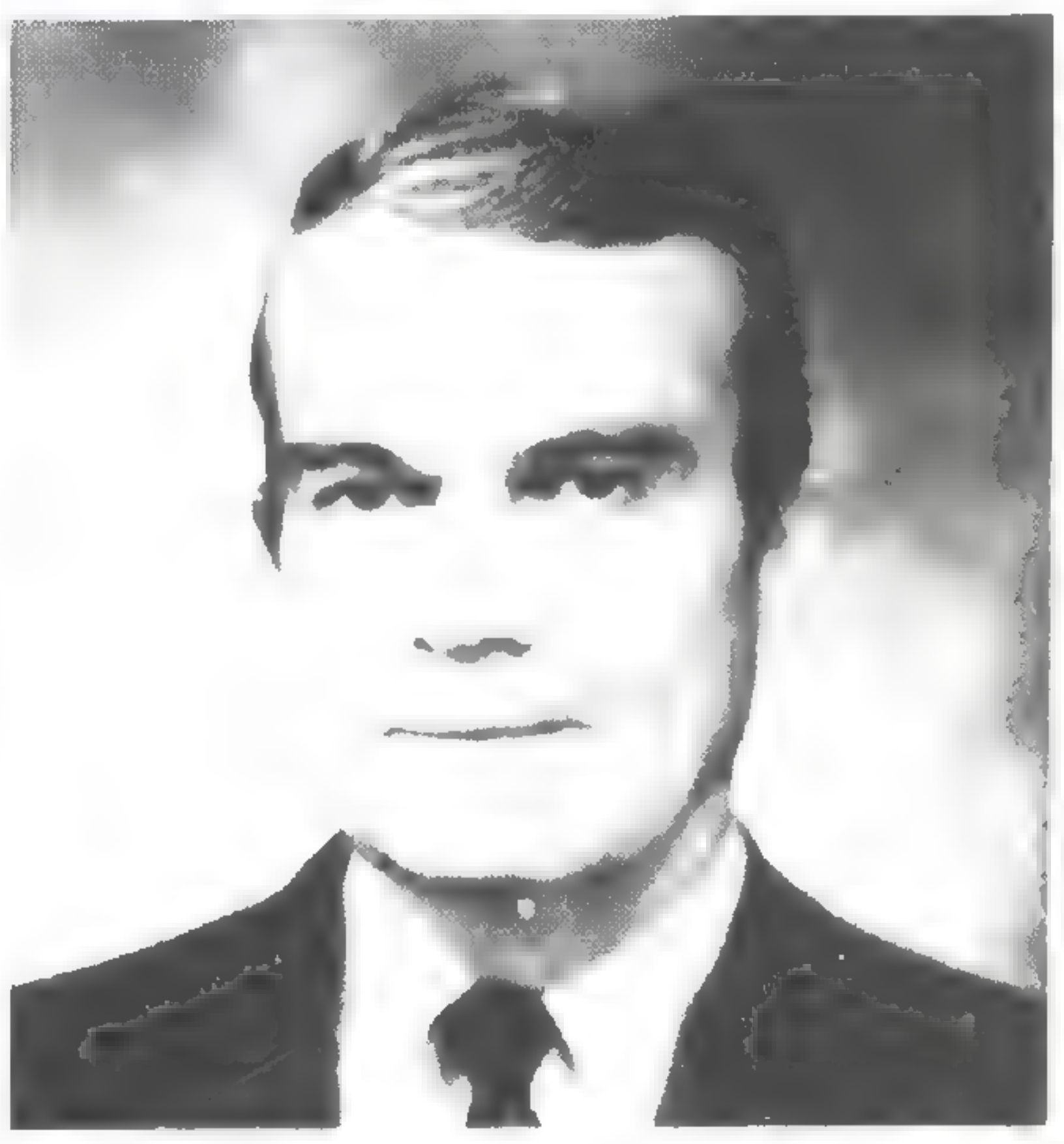
Mr. Schlafly is chairman of the Board of Trustees of Saint Louis University, a position he has held since 1967. He also is a member of the St. Louis Board of Education, having served as the board's president for three terms. He received the St. Louis Award in 1960 "for his efforts to improve the quality of education in the City of St. Louis."

Mr. Schlafly replaces Mr. A. Timon Primm, III, vice president and general manager of The Pulitzer Publishing Company. A member of the Garden's Board since 1964, Mr. Primm has been active in the Garden itself and especially in the development of the Arboretum.

Tom K. Smith, Jr.

Robert Ringen Hermann

Dr. Raven and retiring president Joseph H. Bascom.



Daniel L. Schlafly

SPRING GARDEN WORKSHOP AND PLANT SALE MARCH 8 AND 9

The Garden's third annual Spring Garden Workshop will be held Saturday and Sunday, March 8 and 9, in the Floral Display House and the Head House. Hours on Saturday are from 11 a.m. to 4:30 p.m. and on Sunday from noon to 4:30 p.m. Admission is free, although non-members must pay the regular gate fee of $1.

"The workshop is on all problems concerning spring gardening," according to Robert Dingwall, Chief Horticulturist, who is director of the workshop. Some of these problems, Dingwall said, are the selection of the best varieties of vegetables to grow in the St. Louis area; how and when to prune trees and shrubs; seed sowing and transplanting; and the container growing of vegetables in limited space areas.

The workshop will feature approximately two dozen display and information booths set up by the Garden staff, horticultural societies and commercial gardening firms. Representatives of the participating groups will give on-the-spot assistance with spring gardening problems and offer any printed materials they have produced for the workshop.

Spring Plant Sale

In conjunction with the workshop a Spring Plant Sale will be held on the same days in The Plant Shop, formerly the Growing Center. Hours for the sale are from 9 a.m. to 4:30 p.m., and there will be a discount of 15% on all plants. Members are reminded that the plant sale begins two hours earlier than the workshop on Saturday and three hours earlier on Sunday.

FEBRUARY

Thoughts this month should be geared to reactivating the garden. Before the end of February temperatures are usually moderating and soil conditions are such that plantings can begin.

Seed Catalogs

Seed catalogs should have been ordered and be on hand now. Many of these were available late in December and this past month. Now is the time to study these carefully and select the seed and varieties for the garden this spring. Orders should go in as early as possible to avoid disappointment because some varieties may be in short supply.

However, I would urge that you not order more seed than you need lest you waste both seed and money; remember, it is usually very difficult to carry seed over from one year to another because it loses germination very quickly. Seed houses report that there is sufficient seed to go around this year. However, some popular varieties might be sold out as orders come in very heavily and it may be necessary to request a similar variety.

In selecting seed, particularly for the vegetable garden, it is important to choose varieties that are disease resistant: determine this knowledge through careful study of catalogs. Thinking of tomatoes in particular, I urge you to make sure they are fusarium resistant.

Tomato Varieties

A few good tomato varieties growing here in Missouri are: Avalanche, an F_1 hybrid with medium red, large globe-shaped fruit. It is very crack resistant and does not develop green shoulders; Pink Gourmet, an F_1 hybrid with large pinkish fruits; Sun-Up, an early bearing F_1 hybrid is a compact bush-type plant that should not be staked. This plant has concentrated early set and requires fertile soil. The fruit is red with good crack resistance and uniform ripening. It is wilt resistant with maturity in about 62 days; Supreme, an F_1 that produces medium large fruit of good red color. The fruit is smooth and firm with average crack resistance and does not develop green shoulders. It is wilt resistant and develops in 68 days. Allow the fruit to become fully ripe for best color and flavor.

New Vegetables

Two new vegetables that are All American Winners for 1975 that do well when sown early in St. Louis are: Broccoli, Premium Crop; this is a very firm, deep green head and is ready for harvesting in about 58 days. Another member of the cabbage family (an All American 1975 selection) is Cauliflower Snowcrown. This is a very vigorous growing hybrid making well-rounded, pure white solid heads weighing up to two pounds each. It is more vigorous, more uniform, and easier to grow than the standard Snowball varieties. These should be started very early; anytime this month is ideal. Start them in a hot bed or coldframe or indoors, and transplant as soon as the plants have four to five leaves to the outdoor area.

When buying vegetable transplants, have the variety names with you. Do not accept substitutes unless you know the varieties are disease resistant, as stated earlier.

Those of you who are starting a vegetable garden for the first time should now select an area that gets sun for 10 to 12 hours during the day – an area well drained and free of tree and shrub roots. The ground should be worked up as soon as possible with a good layer of compost put on top and dug in when the soil is ready for digging.

In February dormant oil sprays should be applied to trees and shrubs to control scale insects. Apply when the temperature will not drop below 40° for at least 24 hours. Apply liberally to all parts of the plant at the same time. The substance is not harmful to birds or animal life.

This is a good month to start pruning plants which flower mid to late summer such as Clematis, Tamarisks, Privet, Hydrangeas, Smoke-Tree, Buddleia, Snowberry, and Althaea the Rose-of-Sharon. Cut branches of *Euonymus alatus* make interesting branches and are very effective when the tiny leaves appear. These can be placed in warm water indoors and the branches sprayed with warm water once or twice a day until the new leaves emerge. Others suitable for cutting and bringing in for early color are: *Forsythia* and *Spiraea thunbergii;* many of the flowering fruit trees such as apple and pear and early flowering shrubs all can be forced successfully this way.

Chickweed Elimination

This is the month to initiate good control for eliminating chickweed. Chickweed has the advantage of growing when the weather is still very cool and flowers and sets seeds before other plants begin to grow. In any area where Chickweed is growing, remove it immediately; where large masses are apparent, use a herbicide recommended for chickweed control. Spray on with relative ease at this time of year when other things are dormant and there is less chance of damage. Avoid, however, making contact with other plants whenever possible.

Because fertilizer will be in short supply this year, it is important to build your soil up with plenty of organic matter either from your compost or from areas that have decomposed leaves available. Wood ash from the fireplace should be stored in a dry area and applied to the garden as a good source of

MEMBERS
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As mentioned before, a trip for Garden Members to attend the Chicago Flower Show – April 11 to April 13 – is planned.

It will be an unstructured weekend, giving you the entire time to do exactly as you wish. We will provide your train ticket and hotel reservation only. We will be staying at McCormick Inn, the lovely, modern motel located next door to McCormick Center, the site of the renowned flower show.

Members and friends may participate, but we have a limited allocation of space, so please call our office, 772-7600, as soon as possible.

We know you will enjoy traveling with fellow Garden enthusiasts – and what a delightful way to spend a Spring weekend! We hope to hear from many of you soon.

Sally Schiller
Executive Secretary
Members of the Garden

---

phosphorus when the soil has been worked up.

Orders should be placed for fruit trees and plants put in as soon as the ground can be worked.

Seed that can be planted outdoors if the ground has been prepared are: Shirley Poppies, Larkspur, Snapdragons, Lettuce, Parsley, Onions, and Spinach.

Garden tools should be cleaned and lawn mowers thoroughly serviced so that they will be ready to use as soon as the season starts. This should not be delayed any longer.

Geranium Cuttings, House Plants

Geranium cuttings can be taken this month from plants stored last fall. A good idea is to let the cuttings lie on a shelf for a day to let them callous before placing them in a growing medium. Keep the medium just moderately moist until the plants start to root. Over-watering can be disastrous at this stage.

Continue to check house plants to see that they are not infected with red spider or other insects. Continue to syringe the plants at regular intervals, and, as light conditions improve and plants continue to start to make new growth, step up the watering program gradually. Occasional feedings of liquid fertilizer may be started at this time; increase feedings as growth becomes more active.

Robert Dingwall, Chief Horticulturist

Marion B. Pfeiffer has grown orchids for the Garden since 1947. During the past year the Garden received several awards for extraordinary specimens in its world famous collection.

ORCHID SHOW ON DISPLAY THROUGH MARCH 16

The Garden's annual Orchid Show opened on Saturday, February 1, in the Climatron, and will continue through March 16.

More than 300 varieties of orchids are represented in this year's show. To afford a natural setting, they are displayed hanging in trees and amid tropical foliage in the Climatron.

All of the orchids displayed are from the Garden's own collection which dates back to the 1870's when Mrs. Henry T. Blow donated her orchids to Henry Shaw.

The most important reason for any botanical garden's collection is the preservation of the species orchid. Through the large-scale ignorant or willful plundering of tropical forests by commercial collectors, many species have been lost in their native habitat and, hopefully, will only be found in private collections.

Today the Missouri Botanical Garden's collection is much smaller than in the past but constant effort is being made to upgrade the collection and acquire and propagate the more rare and valuable specimens.

Because orchids are found from the very high to the very low dry altitudes, a collection of species requires knowledge of and attention to the special requirements of the different kinds. Thus the care of a smaller, more varied collection is more time consuming than the care of large houses of one genera.

The generous donation of many friends of the Garden, of their time, money and plants, helps the collection to continue to grow.

Marion Burke Pfeiffer, Orchid Grower

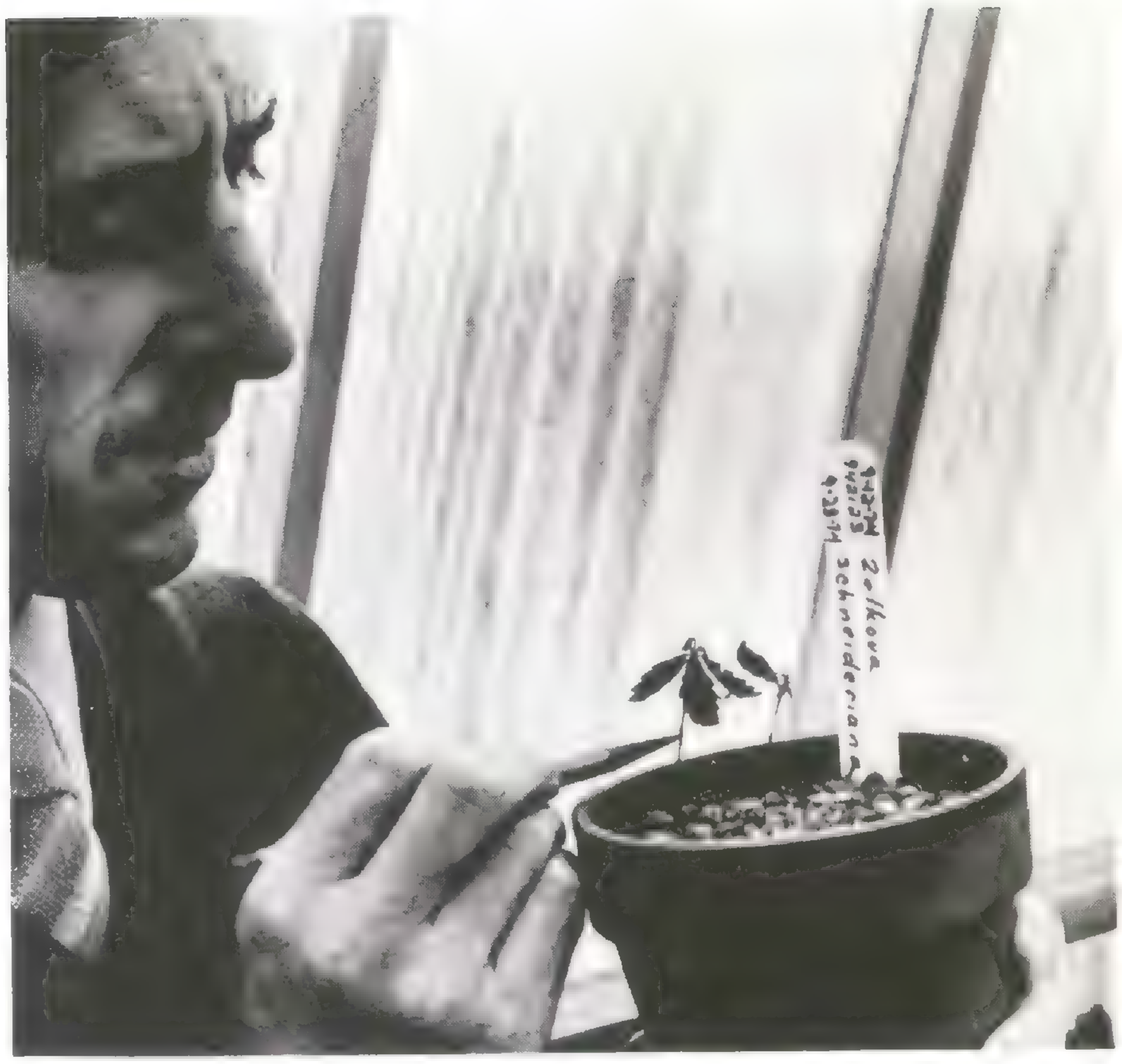
NEW CHINESE PLANT MATERIAL FOR THE MISSOURI BOTANICAL GARDEN

Since the early 19th century, the native flora of China has been a rich source of plant material for aesthetic utilization in western gardens. Following the second World War, the ensuing political developments virtually terminated the exchanges of botanical and horticultural materials between Chinese and western institutions, a factor which has resulted in concerted efforts on the part of western botanists and horticulturists to re-establish mutually beneficial exchange programs. Considering the above background, it is of utmost importance that exciting beneficial links appear to have been established between the Nanking Botanical Garden in China and the Cary Arboretum, a branch of the New York Botanical Garden.

Dr. Thomas S. Elias, Assistant Director of the Cary Arboretum, recently received a selection of seeds from Nanking and generously sent a limited quantity of these for us to attempt to cultivate at the Missouri Botanical Garden. It is of particular significance that there is a great similarity in climate between St. Louis and Nanking, probably much greater than any other city in the United States, and because of this factor, we are now attempting to establish direct links ourselves with the Botanical Garden in Nanking.

Seeds of four different native Chinese species were received from Dr. Elias: *Cercis chinensis, Albizzia julibrissin, Zelkova schneideriana,* and *Sinojackia xylocarpa.* It is pleasing to report that we have achieved germination of the first three subjects. The *Zelkovas* are close relatives of the Elms and are trees of considerable quality when considered for their garden value. As much of our American Elm population has been subjected to destruction in recent years by the Dutch Elm Disease, it is possible that the genus *Zelkova* may act as a possible replacement in the years ahead. *Cercis chinensis* is a Chinese counterpart of our American Redbud – *Cercis canadensis* – producing glossy green heart-shaped leaves which can reach up to 5 inches in diameter and bright pink flowers in May. The Silk Tree, *Albizzia julibrissin,* will already be familiar to many of our readers. This small tree, or shrub, is characterized by its handsome foliage and attractive fluffy pink inflorescences produced during spring. Plants of this later species growing in the Missouri Botanical Garden appear to be near their most extreme limit of hardiness and, thus, it will be interesting in years to come to see if material of this species from a known geographical location will prove to be hardier than the existing specimens.

John Elsley
Curator of Hardy Plants



John Elsley, Curator of Hardy Plants

COMING EVENTS

Orchid Show	Feb. 1-March 16 Climatron
Camellias in Flower	Now through late March
African Violet Society Show	March 1-2 Floral Display House
Sculpture Exhibit Elizabeth Phelan	March 8-24 Climatron
Canary Islands Trip Departs	March 8
Spring Garden Workshop	March 8-9 Floral Display House and Head House
Special Plant Sale	March 8-9 The Plant Shop
Special Lectures on Vegetable Gardening	March 11, 18 and 19 Lehmann Building (Details in March *Bulletin*)
Canary Islands Trip Returns	March 16
Spring Preview Party	March 21
Spring Flower Show	March 22-April 13
Chicago Flower Show Weekend Trip	April 11-13
Plant Clinic	April 19
Flower Sunday, Christ Church Cathedral	April 27

TRIBUTES, NOVEMBER 1974

In Honor of Mr. David Frelich
Lois and Mike Weigert

In Honor of Dr. Bernard Garfinkel
Laura and John Blumenfeld

In Honor of Mr. Henry Hitchcock
Mr. and Mrs. W. N. Eisendrath, Jr.

In Memory of Mrs. Dorothy Pershall Belz
Mr. and Mrs. Harry Wuertenbaecher, Jr.

In Memory of Elizabeth Cantrell
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In Memory of Mrs. Arthur Felker
Mr. and Mrs. William A. Frank

In Memory of Mr. Edwin S. Fichtel
Mrs. Arthur Lobke
Ted and Etta Taylor

In Memory of Dr. Vincent Jones
Clayton Garden Club #3

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Mr. and Mrs. William J. Hedley
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In Memory of Mr. Sidney Komie
Dr. and Mrs. Harry L.S. Knopf

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Anonymous Contribution
ITT Blackburn Company — Contribution
Memorial - John Sexauer -
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FOR VALENTINE'S DAY
Give a Gift
Of Growing Love
— Membership —
In The Garden

MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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Missouri Botanical Garden Bulletin

50th ANNIVERSARY OF MISSOURI BOTANICAL GARDEN'S ARBORETUM AND NATURE RESERVE

The spring of 1975 signals the beginning of the 50th anniversary year of the Missouri Botanical Garden's Arboretum and Nature Reserve at Gray Summit, Mo.

Recognition of this magnificent facility which occupies 2,200 acres in Franklin County, 30 miles southwest of St. Louis, will emphasize throughout the year the historic significance of its purchase by the Garden in 1925 and its diverse programs of research and education.

The Arboretum was purchased 50 years ago as a refuge for the Missouri Botanical Garden, when, in the early twenties, high levels of smoke pollution killed large numbers of plants and endangered especially the exotic collections. Greenhouses were constructed at the Arboretum and the Garden's orchid collection transferred there; conifers from around the world were extensively planted in the Pinetum area. But after the city reduced severe pollution in the 1930's, the plan for relocation was abandoned and the Arboretum was virtually closed for many years.

In 1969, however, limited funds were made available to begin development of the Arboretum as an education center. Facilities were renovated and programs were developed of such quality that in 1972 the U. S. Department of the Interior dedicated the Arboretum as a National Environmental Educational Landmark (NEEL). This award, given to only 16 other non-federal sites, was an important national recognition of the Arboretum as an educational institution.

Staff, Programs

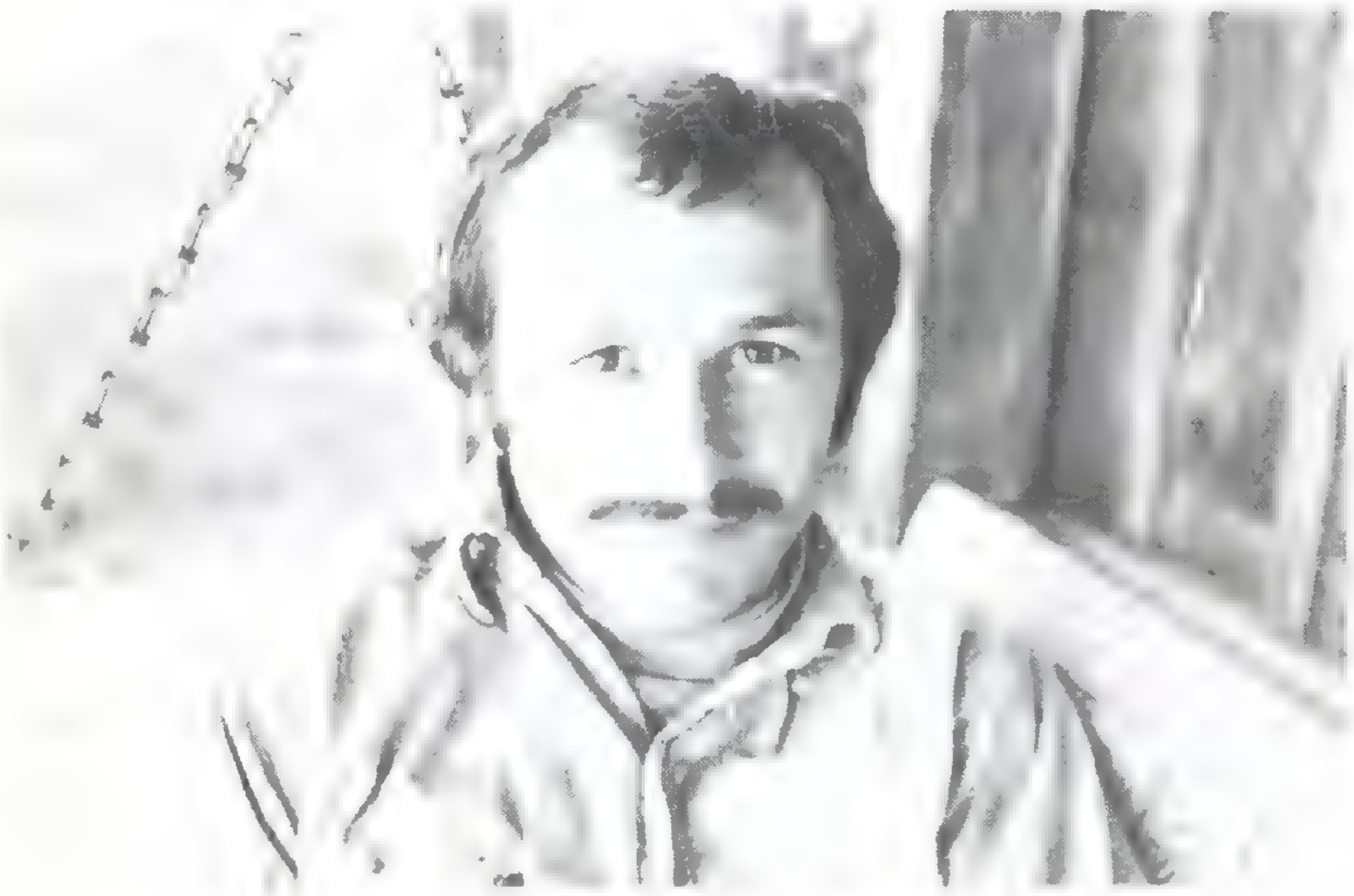
Of the present staff of six, two of whom, are part-time, four work with educational programs in schools in St. Louis and St. Louis County areas. Arrangements with the schools include the funding support of the County Cooperating School Districts, Inc., a consortium of 26 County school districts. A special educational contract with the Clayton School District is an experimental program in resident education being carried out in several rustic farm buildings on Arboretum property south of the Meramec River. A contract with the Affton School District provides science coordination and establishment of science goals for the school district.

These special school programs are carried out in addition to the numerous routine educational activities conducted by the

A trail through nature's bounty . . .

Welcome
Please
register at
Visitor
Center →

The Arboretum welcomes all . . .



Superintendent David Goudy

Volume LXIII NO. 12

MARCH, 1975

Arboretum staff. Thousands of children are guided through the area annually, and garden clubs visit for wildflower tours and rides on the Wilderness Wagon during the fall color season. Periodic workshops, demonstrations and open houses cover such subject areas as astronomy and organic gardening. The Arboretum staff thus continues and improves the institution's role as a leader in outdoor education consistent with its stature as a NEEL site.

Primary responsibility for consultant and teacher training tasks belongs to John Doty, who joined the Arboretum staff in the fall of 1973. His bachelor's degree in biology is from Miami University of Ohio, and he has studied in the master's degree program in Outdoor Education at the Southern Illinois-Carbondale Outdoor Laboratory. Also from SIU-Carbondale is Gary Winzenburger, hired recently as Supervisor of the Grounds and Chief Naturalist for all Arboretum facility tours. David Goudy is Superintendent of the Arboretum.

He and his staff invite Members of the Garden and their families and friends to visit the Arboretum and to enroll their children in the Pitzman Nature Study program conducted there each summer. Mr. Goudy stresses that, beyond special educational programs offered, the Arboretum provides an area for the quiet enjoyment of nature's beauty. Over ten miles of hiking trails are set aside for persons wishing to "find respite from the city and motorized traffic."

And the air continues to be fresh and as relatively free of pollution as it was at the Arboretum in 1925 – when the Garden planned to move there, plants, personnel and all.

CALENDAR OF EVENTS

Spring Flower Show	March 22 – April 13 Floral Display House
Closing Date: Elizabeth Phelan Sculpture Show	March 24 Climatron
Easter Plant Sale	March 24-29 The Plant Shop
Sculpture Show Robert Nussbaum	April 5 – May 5 Desert House
CASA Concerts (Community Association for Schools for the Arts)	April 6, 13, 20, 27 Lehmann Building Auditorium
Chicago Flower Show Weekend Trip	April 11 – 13
Plant Clinic	April 19
Flower Sunday	April 27 Christ Church Cathedral

WILLIAM R. ORTHWEIN, JR. ELECTED TO BOARD OF TRUSTEES

The election of William R. Orthwein, Jr., President and Chief Executive Officer of McDonnell Douglas Automation Company, to the Board of Trustees of the Missouri Botanical Garden has been announced by Mr. Tom K. Smith, Jr., newly elected President of the Board. Mr. Orthwein replaces Mr. C. Powell Whitehead who has been named an Advisory Trustee.

Mr. Orthwein, a graduate of Yale University, joined McDonnell Aircraft Corporation in 1942 and in 1963 was named Vice President and Chief Executive Officer of the McDonnell Automation Center.

From 1966 to 1970 he was Corporation Vice President and President of the McDonnell Automation Company. He became Corporation Vice President and President and Chief Executive Officer of McDonnell Douglas Automation Company in 1970.

Mr. Orthwein is a member of the boards of directors of numerous cultural, business, church, civic and charity organizations, and has served on the St. Louis County Supervisor's Organization and Operating Study Committee and the St. Louis Commission on Equal Opportunity.

Mr. Charles Powell Whitehead, appointed an Advisory Trustee, served as President of the Board for three years, 1970-72. He joined the Board in 1965 and played an important role in the 1969 Capital Fund Drive, funds from which made possible the construction of the John S. Lehmann Building.

President of General Steel Industries prior to his retirement in 1964, Mr. Whitehead received the annual Brotherhood Award of the National Council of Christians and Jews in 1966, and was named the Globe-Democrat Man of the Year in December, 1968. The Garden is fortunate that a man of Mr. Whitehead's distinction, accomplishment and dedication will continue to serve the Board as an Advisory Trustee.

SPRING FLOWER SHOW ON VIEW THROUGH APRIL 13; PLANT SALE AND EASTER EGG EXHIBIT RUN CONCURRENTLY WITH ANNUAL DISPLAY

The excitement and beauty of the 1975 Spring Flower Show, a panorama of spring blossoming plants, summer blooms and flowering shrubs, will be enhanced by three Garden events.

The show, open to the public from March 22 through April 13, will be previewed by Members on Friday, March 21, from 5:30 to 7:30 p.m. in the Floral Display House. The party is sponsored by Stix, Baer and Fuller Co. and will feature a Fashion Promenade.

Plant Sale, March 24-29

A second event, which begins the Monday after the show opens, will be the Easter Plant Sale in The Plant Shop in the Floral Display House. The sale will end March 29. Hours are from 9 a.m. to 4:30 p.m., and there will be a discount of 15% on all plants.

Exhibit of Prize Winning Eggs

A surprise event this year will be the display, from March 25 through April 1, of 40 prize winning Easter eggs in a city and county-wide egg decorating contest for grade school children, sponsored by Stix, Baer and Fuller Co. The winning eggs, judged by local artists, will comprise a special exhibit in the Spring Flower Show display area.

Hours for the Spring Flower Show are 9 a.m. to 5 p.m. daily.

GARDEN GATE SHOP ITEMS OF IMPORT: *Hand woven basket plant containers from Haiti, displayed by Mrs. Marilyn Svejkosky, Manager of the Garden Gate Shop, are available at prices ranging from $10 to $50. Members receive a 10% discount on all purchases.*

CHICAGO FLOWER SHOW GROUP DEPARTURE APRIL 11

Union Station will be the scene of the departure of the Members' first group trip to attend the internationally famous Chicago Flower and Garden Show. Transportation will be via Amtrak, with hotel reservations at the McCormick Inn for the two night weekend. The Chicago Show is the world's largest indoor flower show. Members and their friends who wish to join the weekend trip should contact the Garden's Membership office.

'CASA' CONCERTS AT THE GARDEN: FOUR SUNDAYS OF APRIL

Concerts by professional and student musicians of CASA, the Community Association for Schools for the Arts, will be presented each Sunday in April at 2 p.m. in the John S. Lehmann Building auditorium. The programs will be open to the public at no charge other than the regular entrance fee to the Garden. Members will be admitted free.

The concerts on April 6 and 20 will be by the CASA Jazz Ensemble of approximately 20 musicians directed by Willie G. Murry of the music faculty at Sumner High School. Their repertoire emphasizes compositions by Thad Jones, Oliver Nelson, and Thelonius Monk.

Classical guitarist Michael Cedric Smith will perform in recital on the other two Sundays, April 13 and 27. Smith, a graduate of the Peabody Conservatory of Music, Baltimore, teaches classical guitar for both CASA, St. Louis Conservatory of Music, and CASA, Community Schools.

CASA operates the St. Louis Conservatory of Music and four community schools which are located in the midtown section of St. Louis, in Clayton, in Webster Groves, and in the West County area. The Conservatory has an enrollment of 60 and the Community Schools serve 1,200 students of college age or younger who are preparing for professional careers in music.

Gardening in St. Louis

MARCH GARDEN HINTS

This is the month when all gardeners really get back into harness and find numerous jobs that are now musts. Tools that were not cleaned, oiled and sharpened must be readied now.

This is the month to attend garden workshops and flower shows to see the latest varieties for the summer garden. Carry a small notebook – a camera with a simple flash attachment is a good notebook – and record without embarrassment, and in whatever way seems most helpful, the exhibits or parts of exhibits that interest you.

Because many plants are best planted when dormant, select new shrubs and evergreens and get them in the ground as early as possible. Dormant rose bushes cost less than potted ones, are easier to ship and often make superior plants through the ensuing seasons. Dormant rose bushes must be planted when dormant. Once they start growing out of the ground, they start weakening. Start tuberous begonias for summer bloom; plant them hollow side up in containers of moist peat moss. Avoid overwatering, which causes mildew. Once new growth appears and is about three inches long, transplant to six inch pots in potting soil high in organic matter, and grow at 60° for best results.

Sowing of Vegetables and Annuals

Coldframes and hot beds need special care. On warm days, ventilate well and watch for sudden drops in temperature. This is also true of the home greenhouse. Many annuals can now be started, but do not plant too early for fast developing types. Wait on these till later. Annuals to sow now include petunias, verbenas, calendulas, snapdragons, carefree geraniums. Vegetables to start now are cabbage, lettuce, celery, onions, tomatoes. Peas not already started should be planted in the ground immediately. Start tubers of cannas and caladium now; glads may be planted outdoors from the middle of the month on for early summer cut flowers. Plan to plant at intervals of about three weeks to give continuous bloom. Pansies can also be set out this month.

Indoor Plants, Lawns

Watering and feeding of indoor plants will need to be stepped up now with better light and growing conditions. Because new growth is now active on house plants, repot if necessary and pinch back growth tips to cause the plants to bush out. Control insects as needed.

This is a good time to take cuttings of geraniums, coleus, fuchsias, abutilons (flowering maple), dieffenbachias, philodendrons and others for planting outdoors later.

Lawns should be carefully raked to clean up all debris of old leaves, twigs, etc. Bare areas should be dug over, adding humus and planting good seed. Fertilize to encourage good root growth. Top dress lawns when possible with rich top soil and organic matter. Aerate compacted areas and roll lawn lightly to firm grass roots. Rolling is not done to level a lawn.

Prune broken twigs and branches. Old cases on raspberries should be removed now. Fruit trees should be completely pruned now to remove weak or crossed branching and to head tops back to control height. Don't prune roses or remove mulch until early April after all danger of severe frost is over.

Perennials

Fall flowering perennials such as asters, phlox, and others should be divided and reset now. Fertilize beds well with organic matter and bone meal; bone meal is beneficial also around roses. Remove all weeds from borders and flower beds that were left from last fall. These will be growing actively and if allowed to persist will soon produce more seed. Once areas are cleaned up, apply mulches lightly to prevent weeds and loss of moisture.

Avoid disturbing roots of azaleas and rhododendrons which are produced near the surface. Apply cottonweed meal as growth commences and add mulch around plants if needed.

Check trees and shrubs for storm damage and prune out broken branches. Avoid pruning spring flowering trees and shrubs until after bloom is finished.

Robert Dingwall
Chief Horticulturist

Member of
The Arts and Education
Fund of Greater St. Louis

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M. P. CRONIN, Editor

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MOST RECENT 'ANNALS' OF MBG DETAILS 1973 SYSTEMATICS SYMPOSIUM

The most recent issue of *The Annals of the Missouri Botanical Garden,* Volume 61, Number 3, was published in late December 1974. This issue, which is nearly 400 pages long, contains numerous contributions by the staff of the Botany Department, together with the proceedings of the annual Systematics Symposium which was held at the Garden in 1973. The theme of that Symposium, which is underwritten by both the Garden and the National Science Foundation, was "Plant-Animal Coevolution," and the variety of titles contained in this issue of the *Annals* reflects the wide range of subject matter which this title includes. A very important article reviewing the distribution of seed plants and past continental movements was contributed by the Garden's Director in conjunction with Dr. Daniel I. Axelrod, University of California, Davis.

In January 1975 Dr. Gerrit Davidse, who is also an Assistant Curator in the Department of Botany, assumed editorship of the *Annals.*

Marshall Crosby,
Chairman of the Botany Department

DONOR FOR LIBRARY PURCHASE: *Dr. Robert Duemler, right, of Kirkwood, Mo., donated $850 to the Missouri Botanical Garden for the library's purchase of an original manuscript letter of Charles Darwin discussing fossil plants of great importance in the preparation of his book* **The Origin of Species.** *The appeal for donation of funds for the purchase of important library items appeared in the November 1974* **Bulletin.** *Above, Dr. Peter H. Raven, Director, left, and James Reed, Head Librarian, show Dr. and Mrs. Duemler a rare book in the library of the John S. Lehmann Building.*

MEMBERS MEMOS

QUESTIONNAIRE

We would like to ask a favor of you. It will require a bit of your time, but it will be of immeasurable help to us. In order for the Garden's Membership Office to be aware of your attitudes regarding the Members organization, we enlist your cooperation by asking that you complete the following questionnaire and return to: Sally Schiller, Executive Secretary, Membership Office, 2315 Tower Grove Avenue, St. Louis, Missouri, 63110. Your response is extremely important to us for our planning purposes and do know that we will be grateful. Thank you.

1) Why did you join the Members?____________

____

____

2) When did you join?____________

3) How did you hear about the organization?

____ Mail Solicitation ____ Personal Contact

____ Publicity ____ Other (Specify, please)

____

4) How frequently do you visit the Garden per year?____________

5) How frequently do you visit the Arboretum per year?____________

6) Which benefits do you enjoy, or participate in, the most?____________

____

7) Which benefits appeal to you the least?

____

8) Age group: ___18-35 ___35-55 ___55-over

9) Zip Code?____________

10) Suggestions ____________

____

____

MISSOURI BOTANICAL GARDEN BEGINS COOPERATIVE VENTURE WITH SMITHSONIAN INSTITUTION IN PANAMA

Summit Herbarium, which was founded in the Canal Zone by the Missouri Botanical Garden and the Community Services Division of the Panama Canal Company, will soon be moved into new facilities provided by the Smithsonian Tropical Research Institute (STRI). The new location will be at the site of the famous old Tivoli Guest House which had among its first guests President Theodore Roosevelt. About a year ago the aged but elegant wooden structure of the Tivoli, which had shared so much of the history of the Canal Zone, was torn down. Only the concrete kitchen complex now remains on the manicured knoll which overlooks Panama City. This spacious structure is being remodeled and will ultimately form a nucleus for the Smithsonian's operations in Panama.

As a new partner in the operation of Summit Herbarium, STRI will provide a large room for the herbarium collection and the related plant drying operations, as well as an office for the curator. The curator is from the Missouri Botanical Garden. Among those who have served as curator since the founding of the herbarium in 1926 are myself, Dr. Alwyn Gentry, Dr. Helen Kennedy and Mr. Michael Nee. The present curator is Dr. Scott Mori. Dr. Mori, a recent graduate of the University of Wisconsin, is interested in the trees in the family Lecythidaceae (monkey pot family). The curator resides in a trailer house belonging to MBG at Summit Garden. Summit Garden was the original site of the herbarium but the building in which it was located was damaged by fire two years ago. Since that time the herbarium has been in Gamboa, Canal Zone, in a building provided by the Dredging Division of the Panama Canal Company. Summit Garden and Gamboa are both near the middle of the Canal Zone, some distance from Panama City.

Smithsonian Building in Panama, site of the Missouri Botanical Garden's newly re-established herbarium in the Canal Zone.

The new location in Ancon is more convenient for the isthmian scientific community, which is situated near Panama City. It will be more readily available not only to the large scientific staff of the Smithsonian and students and staff of the University of Panama, but also to visiting scientists who often found its somewhat remote location at Summit Garden and Gamboa inconvenient.

It is interesting to note that the new herbarium location in Ancon is only a short distance from the site of the old Missouri Botanical Garden tropical field station in Panama. That site, which is now a grassy slope giving no indication of its earlier use, was once a beautifully landscaped garden world famous for its holding of orchids. The house built on the grounds by its first manager, Mr. Charles Powell, was important as a center of operations for field work in Panama by staff of the Missouri Botanical Garden. Known as the Balboa Orchid Garden, it was begun when Mr. George Pring, superintendent of MBG, met Mr. Powell in Panama on his return from an orchid collecting trip in South America. The two gentlemen became good friends and discussed the prospect of creating a garden in Panama. Mr. Pring was impressed with the possibility of establishing a half-way station where orchids might be held before shipping them to St. Louis. Arrangements were made and by 1926, when George T. Moore, Director of MBG, went to Panama, plans were complete for use of Powell's large orchid collection as a nucleus in the creation of a tropical garden. Many of these specimens were sent to St. Louis and contributed to the development of one of the world's finest orchid collections at the Missour Botanical Garden.

Missouri Botanical Garden activity in Panama has continued to the present, though the orchid garden was lost in the financially difficult times of 1939. Dr Robert Woodson initiated the writing of the FLORA OF PANAMA in 1943, and staff from MBG have been actively studying tropical plants in Panama since then. The establishment of Summit Herbarium in 1969 renewed a much needed base of operations fo these studies.

With the herbarium, its associated field station and the establishment of a permanent home for the curator, the Garden has been able to push forward with its program of exploring the tropics. The move of Summit Herbarium to a more centralized location and the new collaboration with the Smithsonian Tropical Research Institute will add a new dimension of life to the herbarium and to botanical activities in Panama.

Thomas Croat, Curator of Phanerogams

PITZMAN NATURE PROGRAM – THE 18th YEAR

Once again, this program is announced in advance to Members. It assumes a much different format than in previous years, offering diversity of program selection and cost range. Four separate courses are to be given, two at the Arboretum and two at the Garden.

The first is A SENSE OF WONDER, a workshop for parents AND children. It will help parents create in their youngsters a sense of the wonder, beauty, and appreciation of nature. The course will be given by Arboretum staff during the week of June 30.

NATURAL HISTORY introduces children to the botanical garden, plant life, and natural phenomena through first hand experiences. Activities will include walks in the Garden to visit greenhouses; identifying trees; and taking part in nature hunts. The course will be held at the Garden beginning July 7.

HORTICULTURE FOR CHILDREN is a one-week introduction to the fun of growing plants from seeds and cuttings. This will also include work with soil mixtures, potting, and the use of fertilizers. This, too, will be given at the Garden beginning July 21.

NATURAL AWARENESS is an intensive activity and experience-oriented program designed to help children develop a greater appreciation of their heritage from a natural environment. This unusual program will be offered at the Arboretum for two weeks beginning July 28.

The April *Bulletin* will include a registration form with instructions and fees. Registrations will be accepted with publication of the next *Bulletin.*

Kenneth Peck
Acting Chairman
Education Department

DRIED FLOWERS AT TOWER GROVE HOUSE: *Mrs. W. A. Payne, eft, arranged the house's current dining room display of dried flowers rom the Garden, gathered last spring and summer and dried by Mrs. Frederick T. Robinson, Jr., right. Mrs. Ralph Kraus assisted with the project.*

VOLUNTEER POSTMAN PAUL MILLER OPENS DOORS OF COURTESY AND SERVICE ON DAILY ROUNDS OF GARDEN

The distinguished looking, white haired gentleman who zips about the Garden with bundles of mail under his arm is Paul Miller. He began his service as a volunteer (one of the few men) in January of 1974. Delivering the mail and going to the bank bring Mr. Miller in contact with all kinds of interesting people, all of whom he says are an inspiration to him.

Before coming to the Garden Mr. Miller worked 40 years for a wholesale paper company. Now that he has retired, his job here has given him a new lease on life. He does what he does because he enjoys it. And besides, he says, it "gets him out of the house."

The south end of the Administration Building has recently been remodeled. In the basement there is now a mailroom which Paul praises as a glorious improvement.

A quiet, humble man, Paul Miller does his job well and conscientiously. His dependability and devotion are greatly appreciated by all who come in contact with him.

Paul Miller does not go unnoticed and, put very simply, not only do we thank him – we need him.

Susan Mayer, Experimental Greenhouse

NEW INDIVIDUAL MEMBERSHIPS

January 1975

Ms. Sally Altman
Miss Vera Bersch
Miss Barbara Bippen
Mrs. Robert Brandenberg
Mrs. Elizabeth Burgess
Miss Adelyn A. Cavagnaro
Mrs. David Charak
Sarah S. Cowden
Mr. Thomas E. Crane
Miss Louise Degenhardt
Mrs. Kathy Disney
Mrs. Mary E. Disney
Miss Nancy Dowaliby
Mr. Wilton Garner
Mrs. Trudy Goetting
Mrs. Nina J. Hartsell
Rev. Timothy Horner
Dr. David P. Jacobus
Mrs. Margie Jaffe
Miss Rebecca F. James
Mrs. Carol S. Kaufman
Ms. Anne Marie Kuensting
Mrs. Louis A. Latzer
Mrs. Gerald T. Lawlor
Miss Lyla L. Lodwick
Mrs. Ernest D. Loewenwarter
Ms. Nancy Mallonee
Miss Mary L. Miller
Mrs. Margaret C. Mitchell
Mr. John P. Morgan
Mrs. Ella F. Moser
Mrs. Helen Neuman
Mr. Myron B. Newman
Mrs. Sigurd N. Olson
Mrs. E. C. O'Brien
Miss Pat Payton
Mrs. Gail L. Richards
Mrs. Clara Ricker
Mrs. Fred W. Rudde
Mrs. Susan T. Ryan
Mrs. Malvern A. Schweig
Mina Sennott
Mr. Bertram F. Shiner
Mr. John Sobocinski
Mrs. Dickson S. Stauffer
Mr. Kirk R. Stein
Mrs. David Stukenbroeker
Miss Nelda E. Vines
Mr. Jerry D. Wahlig
Mrs. James B. Westervelt
Miss Mirian A. Wiggenhorn

NEW FAMILY MEMBERSHIPS

January 1975

Ms. Annamarie G. Abrolat
M/M Arthur L. Aydt
M/M John R. Balmer
M/M Ralph W. Bartels
M/M Charles M. Becker
M/M Robert E. Beitel
M/M Robert A. Blase
& Family
Mr. Jerry Boyer
M/M Robert Borgford
Mrs. Robert Clavenna
Lucian A. Cohen & Family
Mrs. Idamae Cole
M/M Thomas P. Courtney
M/M John Cowlen
M/M Dana Crosby
M/M A.W. Dahlgran
M/M John H. Dinsmore
Dr./Mrs. Raymond C. Doucette
M/M Henry Dubinsky
M/M Lee P. Durham
Mrs. David L. Dworkin
M/M Julius Eckhoff
M/M Robert Eichholz
& Family
M/M James Folkl
M/M Robert R. Gaines, Jr.
M/M William H. Giese
M/M George Grove
Mr. Alan Hajek
M/M James E. Hardy
M/M Lawrence J. Hensler
Mr. E.E. Hetzel
M/M Caleb W. Holyoke
M/M Richard Huntington
M/M George Ivcich
& Family
Mrs. T. Cartes Johnson
M/M Geo. Johnston
M/M Frank J. Jostrand
M/M William O. Koeln
M/M Charles J. Kruse
M/M Gerhard P. Lang
M/M Charles Lanpher
M/M Louis Manlin
M/M George F. Marr, Jr.
M/M Robert F. McCormick
M/M Clyde V. McKinney
M/M Robin A. McLaren
Miss Jacqueline MacMillan
M/M H.C. Meyer
M/M John M.D. Morse
M/M William O. Mullins
M/M David D. Nace
M/M Gertrude J. Obergoenner
M/M H.H. Ostroff
Mrs. Patricia Patterson
Dr./Mrs. James K. Peden, Jr.
M/M James E. Peres
M/M George Planje, Jr.
M/M William A. Power
Robert & Rose Mary Pries
M/M W.K. Redman
M/M Robert Renard
M/M David A. Robbins
M/M Arne Roestel
M/M James Schnuriger
& Family
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Dr./Mrs. Raymond Slavin
Mr. James L. Sloss, Jr.
Dr./Mrs. Robert S. Smith
M/M Harold W. Stewart
M/M William M. Stuart
Dr./Mrs. Herbert C. Sweet
M/M Robert J. Taylor
M/M R.S. Taylor
Drs. Jobst & Joan Vandrey
Mr. Robert Vogt
M/M Charles A. Weese
M/M Ralph Weidlich
M/M Mark S. Weil
M/M Paul A. Welch
M/M Kenneth A. Westphal
Mr. Ralph A. Wilkinson

NEW CONTRIBUTING MEMBERS

January 1975

Flora Place Protective Assn.
M/M Walter F. Heinecke
M/M Terry L. Lengfelder
M/M Norbert W. Trautt

NEW LIFE MEMBERS

January 1975

M/M Ben H. Wells
M/M M.R. Forrester

TRIBUTES

January 1975

In Memory of Mrs. Helen R. Joynt
Charles & Lucille Bennett
M/M Arthur F. Boettcher, Jr.
M/M William C. Bonsack
Bernadette Campbell
Mrs. Paul R. Felberbaum
Mr. Lew A. Felberbaum
M/M Joseph H. Grand
M/M Don L. Heitman
Japan America Society of
St. Louis, Inc.
M/M Charles R. Kite
Mrs. George Kuechler
Alex & Rosemary Logan
M/M Howard H. McGee, Sr.
M/M William C. Milligan
M/M James Myles
Helen Neiger
Mayor John H. Poelker
Frank, Carole & Michelle Purviance
Lucy M. Schwienher
Louis F. Schwienher
Charles Alan Seigel
Hyman G. Stein
Mrs. Gerald F. Walsh

In Memory of Mr. Frederic Peirce
Japan America Society of St. Louis, Inc.

In Memory of Sister of Carl Stockstrom
Doug and Fern Newman

In Memory of Mother of Mrs. Olines Lessing
Doug and Fern Newman

In Memory of Daughter of Mrs. Dorothy Feinstein
Ernst and Meta Hager

In Memory of Esther Dornhoefer
The Carrs

In Memory of Olga Frankel
Mr. & Mrs. James E. Russell

In Memory of Theodore G. Schmitt
Lucy Schwienher
Betty Campbell

In Memory of Harlan Glidden
Mr. & Mrs. Joseph Kraus

In Memory of Eleanor Richards Cunliff
Mrs. Robert E. Meyer

In Memory of Mrs. Rose A. Henke
Mr. & Mrs. Dan D. Schopp

In Memory of Mrs. Franklin Taylor
Dr. & Mrs. James C. Sisk

In Memory of Andrew Wade
Mr. & Mrs. Don Grunick

In Memory of Mrs. Grace Lichtenstein
Ms. Sally Schiller

In Honor of 50th Anniversary,
Mr. & Mrs. Meyer Levy
Bettye and Dan Rosen
Simon Wagenheim

Celebrate the Gift

of Spring

Give

A MEMBERSHIP IN

THE GARDEN

To Say

Happy Easter or

Happy Passover

MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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AT ST. LOUIS, MO.

Missouri Botanical Garden Bulletin

GARDEN PRESENTS FIRST ST. LOUIS SHOWING OF JOHN CHAMBERLAIN SCULPTURES

An exhibition of large scale sculptures by John Chamberlain, contemporary American sculptor whose works have been shown in major art centers in this country and abroad, is on view outdoors at the Garden from March 29 through April 29.

The Garden is sponsoring the exhibition with the financial assistance of the Missouri State Council on the Arts. Arrangements for the show have been made by the Greenberg Gallery of St. Louis.

The exhibition of 12 large sculptures (one shown at right) is from the Houston Contemporary Museum and will be traveling to the Minneapolis Institute of Art after display at the Garden, the first St. Louis showing of John Chamberlain works. The sculptures are assembled of crushed metal parts of cars and building materials and other "found" or differently utilized objects. These monumental three dimension forms have been described as "forceful, strong and spontaneous compositions accenting deep volumes and eccentric folds in space."

Chamberlain has exhibited widely, including one man shows in New York, Chicago, Boston, Los Angeles and London, and has had numerous international exhibitions. He is acclaimed as a sculptor from the generation of abstract expressionists of the 1950's and 1960's who established American art as an international influence and made New York the art capital of the world.

Dr. Raven Lectures in Israel, Strengthens Ties With Scientists There

Dr. Peter H. Raven, Director of the Garden, recently returned from Israel where he delivered nine lectures by invitation in the Department of Botany at the Hebrew University of Jerusalem. The lectures were concerned with pollination biology — the relationships of insects and other animals to pollination of flowers — and continental drift and the distribution of organisms. These are both research areas in which Dr. Raven has achieved international recognition.

While in Israel Dr. and Mrs. Raven visited the University of Beersheva, where extensive research is going on in arid land agriculture, and the University of Tel Aviv where Dr. Raven presented a lecture and consulted about the development of a new botanical garden on the university campus.

On the weekends, Dr. and Mrs. Raven traveled extensively through Israel, ranging from Mount Meron on the Lebanese border to the north through Upper Galilee, including Safad, Nazareth and down to the Sea of Galilee at Tiberius, southward to Jericho, the Dead Sea, as well as the Negev Desert where they viewed Professor Evenari's extensive development program in arid land agriculture at Avdat. Crops such

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as grasses, raspberries, almonds and others are grown without artificial irrigation in a region where the annual rainfall amounts to only about two inches a year, by controlling drainage patterns very carefully according to methods developed in Byzantine times and earlier.

The Mediterranean type vegetation of Israel is similar in type to that of southern California and northern Baja California, regions which Dr. Raven, being a native of California, has studied extensively; it was highly instructive for him to be able to see these sides and to exchange views with botanists in Israel during the course of this visit.

The trip provided a splendid opportunity for the strengthening of contacts with the scientists of Israel, many of whom are active in plant systematics and evolution, which are the fields of greatest research importance at the Missouri Botanical Garden.

Consultation with the scientists of Israel gave Dr. Raven increased knowledge of their research plans in relation to ours at the Garden, and helped him establish connections which may allow for increased collaboration in the future.

Prof. J. Galil, Director of the Botanical Garden at the University of Tel Aviv, with Dr. Raven, who is planting a pine, one of the first plants in the new botanical garden — symbolic of links between botany in Israel and the Missouri Botanical Garden.

DR. MARION OWNBEY, ALUMNUS OF MISSOURI BOTANICAL GARDEN, DIES

Dr. Marion Ownbey, distinguished alumnus of Washington University and the Missouri Botanical Garden, died on 8 December 1974. Born on 29 September 1910 in Kirksville, Mo., he received his B.A. and M.A. from Washington University in 1939. From St. Louis he moved to Washington State University at Pullman where he spent the bulk of his professional career. There he continued his studies in the taxonomy and evolution of plants and established himself as a teacher and educator of the highest quality.

From his love of plants and in his position as curator of the herbarium Dr. Ownbey developed a large and important regional plant collection for the Pacific Northwest. This leadership and service was officially recognized by the University through naming the herbarium in his honor. He was one of the four co-authors of the "Vascular Plants of the Pacific Northwest," probably the most important and comprehensive regional flora available in the United States. It was a project which took more than 20 years to complete. He was also well known for his expertise in three genera of plants: *Allium* (wild onions), *Calochortus* (mariposa lilies), and *Tragopogon* (goatsbeard). *Calochortus* was the subject of his Ph.D. Dissertation (published in the ANNALS OF THE MISSOURI BOTANICAL GARDEN in 1940) and his very detailed study of *Tragopogon* has become a classic in the field of plant evolution.

Gerrit Davidse
Assistant Curator, Herbarium

HOLLY DONATION RECEIVED IN MEMORY OF CLARENCE BARBRE

The Garden has recently been honored by receiving a fine specimen of holly from the Great Rivers Chapter of the Holly Society of America, Inc., in honor and memory of the late Clarence Barbre, a former member of the Chapter and a staunch supporter of the Missouri Botanical Garden. Mr. Barbre operated a nursery business for many years in Webster Groves and developed a special interest in hollies and azaleas, being largely responsible for the introduction of the latter group of plants into local gardens some ten years ago. The specimen was generously donated by Mr. Robert C. Simpson of Vincennes, Indiana, one of the leading holly experts in the United States and a member of the Great Rivers Chapter.

The donation was in the form of a 6′ tall specimen of *Ilex opaca* 'Miss Helen', which has been sited in our new Woodland Garden immediately west of the Lehmann Building. This particular cultivar of the American Holly *(Ilex opaca)* will help to enrich our already expanding holly collection, many representatives of which are ideal evergreen subjects for inclusion in local gardens. 'Miss Helen' is an extremely hardy, densley branched conical shaped, upright growing cultivar which regularly produces a large crop of dark glossy red berries each winter. It was originally selected and transplanted in 1936 from some native woodland south of Baltimore, Maryland by Mr. S. H. McLean of the McLean Nursery, Touion, Maryland.

John Elsley
Curator of Hardy Plants

MEMBERS
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Spring and summer promise to be filled with exciting activities for our Members. Mark your calendar now for Saturday, May 24 — Arboretum Day! Enjoy the tranquil beauty of the 2200 acre Arboretum at Gray Summit. More details on this special day will be forthcoming shortly.

By now you have heard about our summer trip to Europe . . . "A Balkan Adventure." The itinerary includes Yugoslavia, Turkey and Romania. The Garden's group will depart on July 27 for two fascinating weeks in this most intriguing area of Eastern Europe. Call the Members Office for all particulars.

The final compilation of figures from the English Garden Party, held last September, reflects that $14,608.99 was raised for the Garden's benefit. Hearty congratulations to Mrs. John (Dodie) Brodhead and her tireless committee for a job well done indeed.

Sally Schiller
Executive Secretary
Members of the Garden

GUIDE TRAINING PROGRAM SET FOR FALL

The Education Department will conduct a new guide training program beginning early September, 1975. The training period will be nine weeks long. Training sessions are held on Tuesday mornings from 9:30 till noon. Classes will be conducted by Garden staff members and veteran guides.

The new training program is being given in anticipation of the completion of several new developments in the Garden. The first is the new Japanese Garden slated for public viewing in mid-1976. Another feature for 1976 is the opening of the Mediterranean House, with its exciting aromatic plants. Considering the stimulus that these features will have on an increasing attendance, the Garden must be prepared to accommodate many more visitors. This can be accomplished by an expanded core of guides who are well informed about these new things and about the Garden as a whole.

Twenty new guides will be accepted for training. If you are interested in helping the Garden in this venture, call the Education Department at 772-7600, station 54 or 74.

Kenneth Peck
Acting Chairman, Education Department

PRAYING MANTIS EGG CASES, LADYBUGS FOR SALE AT PLANT SHOP

Because of the fantastic success we had last year, the Garden's Plant Shop will sell ladybugs again this spring.

These little insects are an excellent alternative for the poisonous insecticides many use on their garden plants and are especially useful in vegetable gardens where poisonous residues are not wanted. The Plant Shop will sell the ladybugs in units of one pint (approximately 9,000 insects) which is sufficient for an average yard or a large vegetable garden. Extra ladybugs may be stored at 32°-36° F. and released at intervals throughout the summer for continued control.

The Plant Shop will also sell for the first time Praying Mantis egg cases, shown above. The Praying Mantis is another beneficial insect that eats a greater variety of insects than the ladybug and can handle larger insects such as grasshoppers and beetles. Each egg case contains approximately 200 eggs and three cases are sufficient for the average yard.

Ladybugs will be sold on a reservation basis only. Each pint is $6.00. Ladybugs must be picked up within four days of delivery to the Garden or the reservation will be cancelled. First shipment is expected approximately June 7 and final shipment approximately July 15. Mantis egg cases are available now until June 1 on a first-come first-serve basis. Each case is 60¢ or three cases for $1.50. Instructions on the use of both insects will be given out at the time of sale.

If you have any questions or would like to make a reservation please call The Plant Shop at 772-7600 or 772-2929.

Dave Balster
Plant Shop Manager

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Gardening in St. Louis

APRIL GARDENING

The month of April sees the momentum of the garden at full pace.

Planting of trees and shrubs should be completed as soon as possible. It is important to get these in before they have a chance to produce much leaf growth; otherwise they will take severe setbacks. Be prepared also to remove any dead or broken branches and prune back any damaged roots if working with bare root material. It is advisable in planting most of these to remove up to 1/3 of the growth to help balance the loss of roots that occurred in digging the plants from the nursery. Water the plants in well and mulch with 3 or 4 inches to control ground moisture and keep a cooler temperature which encourages better rooting.

Eliminate Weeds; Complete Lawn Work

Weeds are in very active growth, and the more time applied in eliminating these now, the less problem there will be in early and mid-summer. April is the time to come in with Pre-emerge for crabgrass; Dacthal is still one of the safest ones to use. Remember: a second application is needed again in early June to give complete control over the summer. Lawn work not completed last month should be done immediately.

Owing to the shortage of fertilizer, it is important to encourage lawn growth through as many other means as possible. Thin areas, if herbicides are not being used, should be reseeded immediately and kept moderately moist until the seeds become established. Do not apply herbicides if sowing new seed, nor sow new seed if herbicides have been used within a six week period. For areas under trees, where it has been difficult to grow grass, consider using ground covers which take less work and will give a good green appearance.

Mulching, Pruning

Mulch on roses should not be removed too much until mid-April when it is high in organic content. Work it into the beds around the roses.

Pruning should be completed by the third week of April; for roses for flowering, about the third week in May.

All weeds and other debris can be chopped up and added to the compost pile which should be kept wet to hasten decay.

The Vegetable Garden

Those who are on a limited income, or who want to grow their own vegetables, should prepare the vegetable garden immediately if they have not already done so. The ground should be worked to a depth 10 to 12 inches and plenty of organic matter incorporated, such as animal manure or any form of partially decayed plant material. Incorporate this well into the soil and, if lime has not been used in the past few years, use a small amount of it and a balanced fertilizer at the rate of about 4 to 5 pounds to a thousand square feet. Vegetables that can be planted now are ones which will grow under cooler conditions – lettuce, carrots, beets, onions, along with many others not requiring warm weather. Do not put out tomatoes, peppers and warmer growing plants until the ground has thoroughly warmed up and all danger of frost has past. Usually, mid-May is plenty of time for these more tender vegetables.

Those who got cooler crops (members of the cabbage family and spinach) in, in late February and early March, will now find that they are growing very actively. See that they receive plenty of water, and, if necessary, apply mulch around the plants to control weeds and keep the ground cool. Be prepared to take these plants out when they mature by the end of April or early May, replacing them with vegetables for the summer months.

Hardy Annuals; Summer Bulbs

Hardy annuals which will stand considerable cold can be set out after the middle of April if they have been properly hardened off. Seed of many annuals such as Alyssum, Zinnias, Marigolds, California Poppies may be sown direct to the garden. Prepare the soil as you would for any other plant – sprinkling the soil lightly and raking lightly in. Keep soil moderately moist until the seeds become established. Many of these planted at intervals of 3 to 4 weeks will give good color throughout the summer months.

Summer bulbs, such as Glads, should be planted at 3 to 4 week intervals – again, to give a continuous succession of flowering material into late fall. Caladium bulbs, which are ideal for shade, may be planted out in late April direct in the ground without starting indoors. See that the soil is well worked up, enriched with organic matter and kept moderately moist until growth starts.

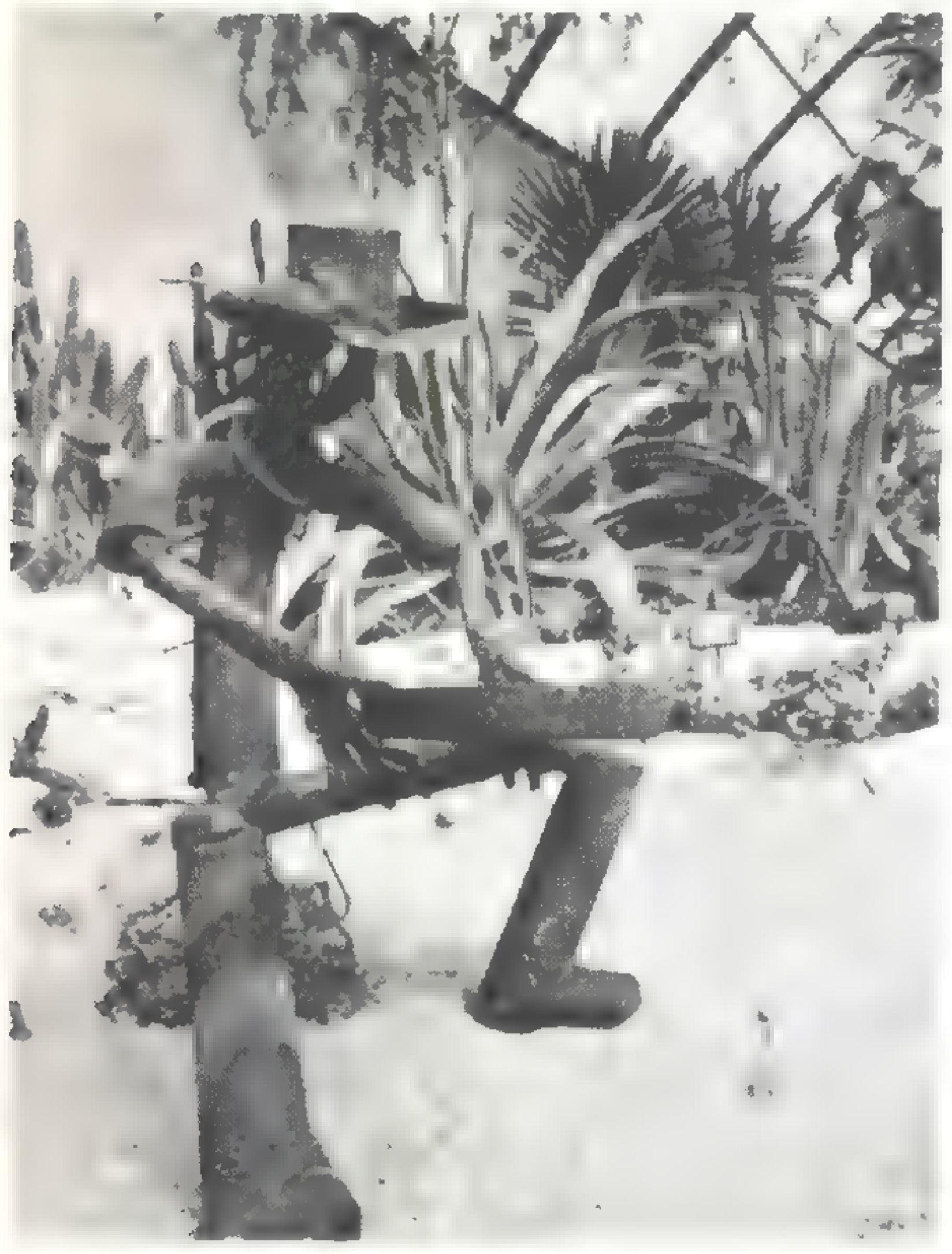
Coldframes and Greenhouses

Coldframes and home greenhouses should receive adequate ventilation now. Leave them open as much as possible during the day only, and close them when the nights are really cool. Plants can be moved from the greenhouse into the coldframe or into a protected place during the day; harden them off for a week to 10 days before planting out in the garden.

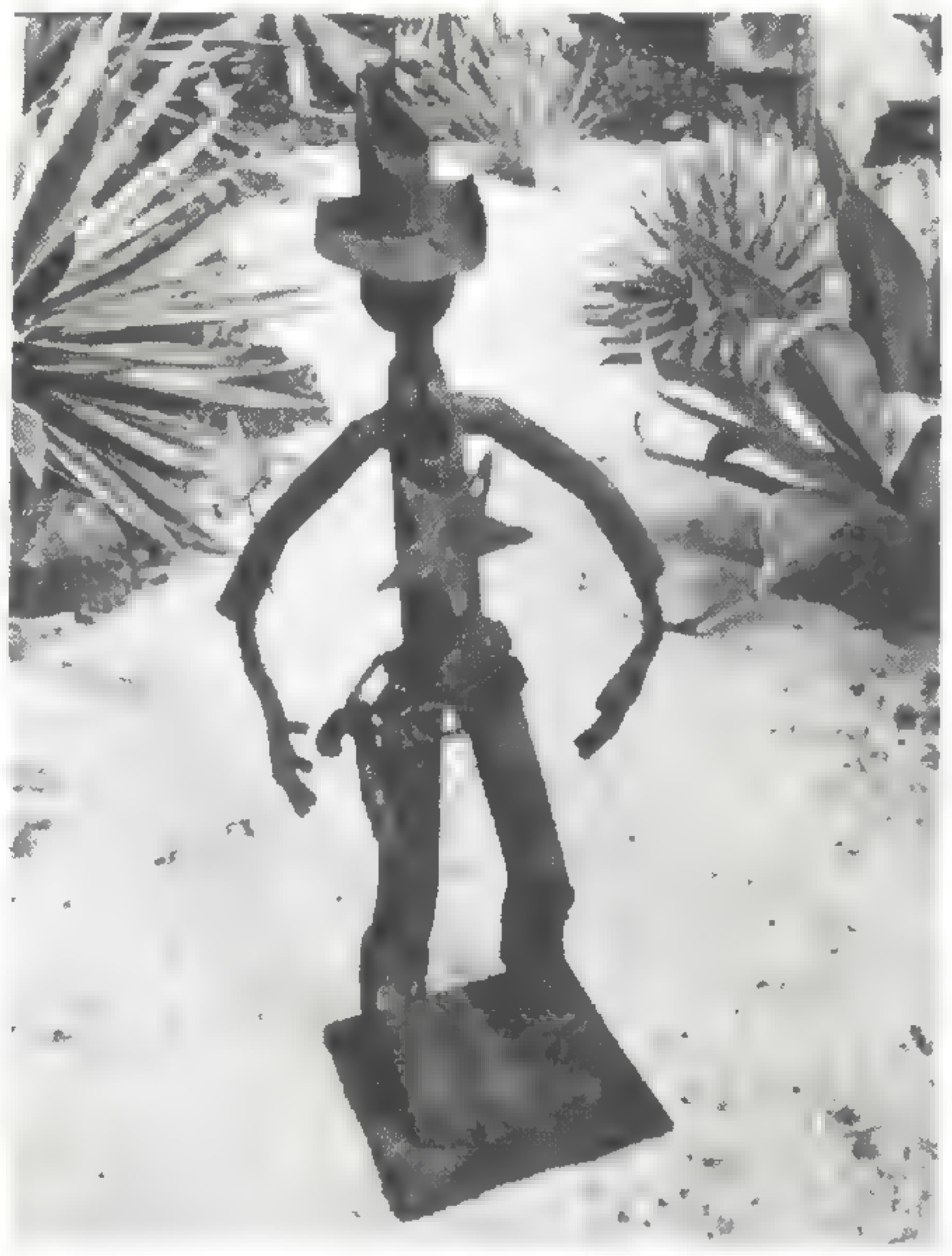
When planting seed direct in the garden, either in the vegetable or flower beds, make sure that the plants are thinned out early – lest they crowd one another and become weak through struggling to get sufficient light and ventilation. Many of these plants can be lifted very carefully early in the morning or early evening and transplanted to areas where there is plenty of space and a need to fill in.

Robert Dingwall
Chief Horticulturist

'FOUND SCRAP METAL SCULPTURES' ON VIEW THROUGH MAY 5 IN DESERT HOUSE



"Grubstake Gambler"



"The Deppity"

Physician-Sculptor Nussbaum, Metal Welding in Basement 'Studio'.

The Desert House will be the setting April 5 through May 5 of an exhibit of "Found Scrap Metal Sculptures" by St. Louis physician Dr. Robert Nussbaum.

Seventeen iron and steel compositions, their parts welded together by Dr. Nussbaum at his Frontenac, Mo., home, will be displayed among the Garden's collection of cacti and succulents from desert regions of the world. Appropriately, most of the sculptures are of subjects representative of the American West and of Mexico.

A graduate of Washington University Medical School, Dr. Nussbaum has been in the practice of internal medicine since 1940. Although he has no formal art training, he has sketched since childhood and began oil painting as a hobby in the 1940's. He moved to wood carving in the 1950's, to stone sculpting in the 1960's and to metal welding in 1970. He finds "humor" and "discovery" in working with found scrap metal, and the sculptures on display in the Desert House reflect the exhilarating experience he finds in his art.

Dr. Nussbaum exhibited at Norton's Gallery in 1971 and at the North County Bank in 1974.

FLOWER SUNDAY APRIL 27

Flower Sunday, a tradition established through Henry Shaw's Will, and an annual event since 1890, will be held April 27 at Christ Church Cathedral. A massive display of flowers in the altar area of the Cathedral, provided by the Missouri Botanical Garden, will be the focal point of a two day Flower Festival beginning at noon Saturday, April 26, and concluding Sunday evening.

The Flower Sunday service will be at 11 a.m., with a special processional of Cathedral clergy and members of the Garden's Board of Trustees. The guest preacher will be Dr. Allen Miller of Eden Theological Seminary.

After an Evensong service at 4 p.m., Dr. Miller will deliver The Scarlett Lecture, established in memory of the late Bishop William Scarlett, a past Dean of the Cathedral and Bishop of the Episcopal Diocese. Dr. Miller's subject will be the relationship between the church and the city.

Throughout the weekend the Cathedral will be open for viewing of the Garden's altar display. On Thirteenth Street, adjacent to the Cathedral, between Olive and Locust streets, festival attractions will include art exhibits, poetry readings, flower stalls and a refreshment garden.

The tradition of Flower Sunday derived from a clause in the Will of Henry Shaw. He bequeathed "two hundred dollars annually to the Bishop of the Episcopal Church of this diocese, in consideration . . . that an annual sermon be preached in such church, and by such minister as he may select; on the wisdom and goodness of God as shown in the growth of flowers, fruits and other products of the vegetable Kingdom." The first Flower Sunday was held in 1890, the year Christ Church was consecrated the Cathedral of the Diocese.

PLANT DISEASE CLINIC APRIL 19

A Plant Disease Clinic will be held on Saturday, April 19, from 10 a.m. to 2:30 p.m. in the Lehmann Building Auditorium.

During the morning, a panel of experts from the Department of Plant Pathology at the University of Missouri — Columbia will discuss problems of ornamental and fruit trees, and the use of sprays and spray equipment. After a lunch break, the panel will diagnose the diseases of plants brought to the clinic.

The MISSOURI BOTANICAL GARDEN BULLETIN is published 10 issues per year monthly except January and August, by the Missouri Botanical Garden, 2315 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

M. P. CRONIN, Editor

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$5.00 per year. $6.00 foreign.

DR. GENTRY RETURNS FROM LATIN AMERICA, REPORTS ON CERRO TACARCUNA EXPEDITION

Dr. Alwyn Gentry, (above, center) specialist in tropical plants and Assistant Curator of the Garden's herbarium, has returned from a four month trip to Latin America. He spent most of his time in Amazonia, visiting American Ecuador, Iquitos Peru, Leticia, Colombia, and Manaus and Belem, Brazil, collecting plant specimens for the Garden's herbarium and studying **Bignoniaceae** *(the trumpet creeper family) under a grant from the National Science Foundation. He also spent a month on the border between the Darien of Panama and Choco of Colombia as leader of a National Geographic Society sponsored expedition to climb and explore the tallest mountain of eastern Panama or western Colombia. This is the first part of his report on that expedition. The conclusion will be printed in the May* **Bulletin.**

The purpose of our expedition was to explore, for the first time, one of the world's most inaccessible and biologically most poorly known places, Cerro Tacarcuna. It is the highest peak in the 400 mile stretch of lowlands which separates the Andes of South America from the Cordillera systems of North and Central America.

Cerro Tacarcuna, rising to a height of over 6000 feet, stands astride the frontier between Colombia and Panama, dominating the Serrania del Darien which also forms here the intercontinental divide between North and South America. Both the Darien of Panama and the Choco of Colombia are widely considered among the world's least accessible areas. Together they constitute the famous Darien Gap, the only obstacle still remaining in the way of completion of the Pan American highway connecting Alaska with Tierra del Fuego. Since Cerro Tacarcuna is at the very heart of the Darien Gap, it is hardly surprising that it has remained unexplored despite its potentially great biological significance.

The approach to Cerro Tacarcuna is not only geographically difficult: The mountain figures prominently in the mythology of the Cuna Indians who regard it as sacred. They have consequently been little inclined to allow would-be blasphemers of their sacred mountain to pass through their land which effectively controls the approach to its base. Moreover these Cuna Indians, famous for their colorful molas, are traditional and sometimes bitter enemies of the Choco Indians who often serve as guides in other parts of the Darien and Choco. Previous expeditions, into lower parts of the region, have been hampered by this hostility. Chocos accompanying one expedition were not allowed to pass through the Cuna Village of Pucuro. A Choco Indian who sneaked past with a second expedition saw Cuna ghosts at an old burial ground part way up the Serrania and subsequently became afraid to leave camp. The Cunas themselves, when induced to assist an earlier expedition, had proved poor packers and unwilling guides, themselves reluctant to enter the mysterious Serrania surrounding Cerro Tacarcuna.

The role of Cerro Tacarcuna in Cuna mythology is interesting. The mountain is said to have been the source of a great flood which wiped out prehistoric Cuna settlements in the Serrania del Darien. The most important of these flooded villages is reputed to have been at the present site of a strange ridgetop lake called La Laguna. The mythical flooded village is said to be beneath the lake protected both by the ghosts of its previous inhabitants and by a monster which inhabits the lake. Ancient Cuna burials abound around La Laguna although today the area is far from the nearest Cuna village. Even in historic times a few Cuna settlements extended into the river valleys of the Serrania with a well documented village named Tacarcuna having been located on the Rio Tacarcuna not far from the base of Cerro Tacarcuna. About 1900 this village was struck by an epidemic, probably small pox, and abandoned. Cerro Tacarcuna is vaguely associated with the source of this epidemic by the descendents of the survivors of Tacarcuna village who now live much further from the mountains in the villages of Pucuro and Paya. As a result of these misfortunes and associated superstitions, the whole area between Cerro Tacarcuna and the upper limits of piragua navigation on the Pucuro and Paya rivers has been completely uninhabited and rarely visited for at least the last 75 years.

In addition to the logistic problems posed by the inaccessibility of Cerro Tacarcuna, the expedition which I led faced another kind of problem: Exactly where is Cerro Tacarcuna? There are no good maps of this virtually unexplored region, much less of Cerro Tacarcuna itself. The backbone of the Serrania del Darien runs generally north and south to form the ontinental divide and intercontinental boundary. This system is drained by numerous parallel rivers raining west into the Rio Tuira in Panama and east nto the Golfo de Uraba on the Colombian side. The alleys of these rivers are separated by high east-west-unning ridges, the highest of which is now known as he Tacarcuna massif. It would appear, however, that different ridge system, located to the south and ow generally known as Cerro Mali, was also called Tacarcuna at one time. At any rate this subsidiary dge system is the one which was climbed by a oological expedition in 1915 and termed "Cerro Tacarcuna" in reports of the expedition. A photo of "Cerro Tacarcuna" taken by this expedition actually hows the peak now termed Pico Mali. To add to the onfusion two different names both presumably erived from "Tacarcuna", are used locally for these wo ridge systems in Colombia: Taca for the northern ne, Tacuna for the southern one. Since both the Rio Tacarcuna and old Tacarcuna village lie adjacent to Cerro Mali that massif might indeed have some claim o the name Tacarcuna. Nevertheless the next and nuch higher ridge system to the north, across the Rio ucro from Cerro Mali, has been designated as Cerro Tacarcuna on all modern maps. The expedition's bjective was this higher and unexplored ridge system.

Defining the Tacarcuna massif still does not solve l the geographical problems in locating Cerro acarcuna itself. From Cerro Mali a number of high eaks are visible along the several kilometer length of he Tacarcuna ridge system. From different perspectives different peaks appear higher. Presumably he highest of these should be Cerro Tacarcuna but which one is the highest? Only after actually climbing o each of the several summits of the Tacarcuna assif with an altimeter would Cerro Tacarcuna be early pinpointed.

Such geographical considerations were of only econdary importance to the members of the Cerro Tacarcuna expedition. We four scientists were all iologists with our primary interest in discovering what kinds of plants and animals occur on this solated high mountain. Besides myself, the xpedition included Dr. Charles Myers, a St. Louis-orn herpetologist from the American Museum of Natural History, Rudolfo Hinds, an ornithologist rom Panama's Gorgas Memorial Laboratory, and Dr. cott Mori, curator of the Missouri Botanical Garden's Canal Zone field station. The potential biological interest of Cerro Tacarcuna is obvious from even he most general map: located midway between the Colombian Andes and the Talamanca Range of Costa Rica and adjacent Panama it should have been a vital way station in the migration of upland plants and nimals between North and South America. Much iological controversy has been centered over how North American plant and animal species reached outh America and vice versa. Was this migration primarily by means of random accidental long-distance dispersal or have past changes in climate and sea level allowed the direct migration of temperate faunas and floras through the now climatically inhospitable lowland Isthmian area? As by far the highest mountain in the critical lowland area, Cerro Tacarcuna might be expected to provide important clues. The presence of temperate zone species on its summit would point toward migration of whole temperate biotas and prove that the gap across which temperate species would have had to disperse under present climatic conditions was only half as great as previously supposed. On the other hand the presence only of species derived from the surrounding lowland tropics would indicate Cerro Tacarcuna's much greater isolation and support relatively long distance dispersal as the major migration mechanism.

Furthermore such an isolated mountain might well be expected to hold many endemic new species of plants and animals waiting to be discovered, no matter whether ultimately derived from temperate or tropical ancestors. Other much lower and less isolated mountains in eastern and central Panama are considered to have very high degrees of plant endemism with many species restricted to each one. This endemism is associated with a kind of vegetation known as cloud forest which occurs on peaks and ridgetops as low as 1000 meters in Panama. Surely a mountain as tall as Cerro Tacarcuna, nearly twice as tall in fact, could be expected to have this very interesting cloud forest formation on its summit. Also the surrounding area of northern and eastern Darien has remained the largest complete blank in the Flora of Panama being compiled by the Missouri Botanical Garden; clearly any collections of plants from the area would be valuable.

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February 1975

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TRIBUTES

February 1975

In Memory of Myrtle Ryden
Tower Grove House Ladies
Bridge Club & Friends
Mrs. Louise Redding
Mabel Stuckwisch
Clara Johannes
Luella Rauscher
Lilly G. Williams
Lucille L. Aude
Bess J. Corn

In Memory of Ely Glazer
Cora Beggs

In Memory of Rev. Herbert H. Wernecke
Roma M. Lister

In Memory of Father of Mrs. Virgil Sorrells
Doug & Fern Newman

In Memory of Bertha Koehler
The Ballmanns

In Memory of Sidney Studt
Victor Packman

In Memory of Mrs. Harvey Frohlichstein
Mr. & Mrs. Elmer D. Abramson

In Memory of Susanne Taylor
Ikebana International — St. Louis Chapter

In Memory of Mrs. Helen Joynt
Audrey & Bill Schneider

In Memory of Nellie Anheuser
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In Memory of Charles A. Hoppin, Jr.
Colonel & Mrs. R.E. Smyser

In Memory of Michael Carter
Carla P. Hanses

In Memory of Richard Brinker
Roma M. Lister

In Memory of Mr. Ernest Fried
Mr. & Mrs. Elmer A. Abramson

In Honor of Mrs. Walter C. Stern
Geneseo Hills Garden Club

In Honor of Birthdays of
Mr. & Mrs. Walter Stern
Mr. & Mrs. Peter Hochschild

MISSOURI BOTANICAL GARDEN BULLETIN
2315 Tower Grove Avenue
Saint Louis, Missouri 63110

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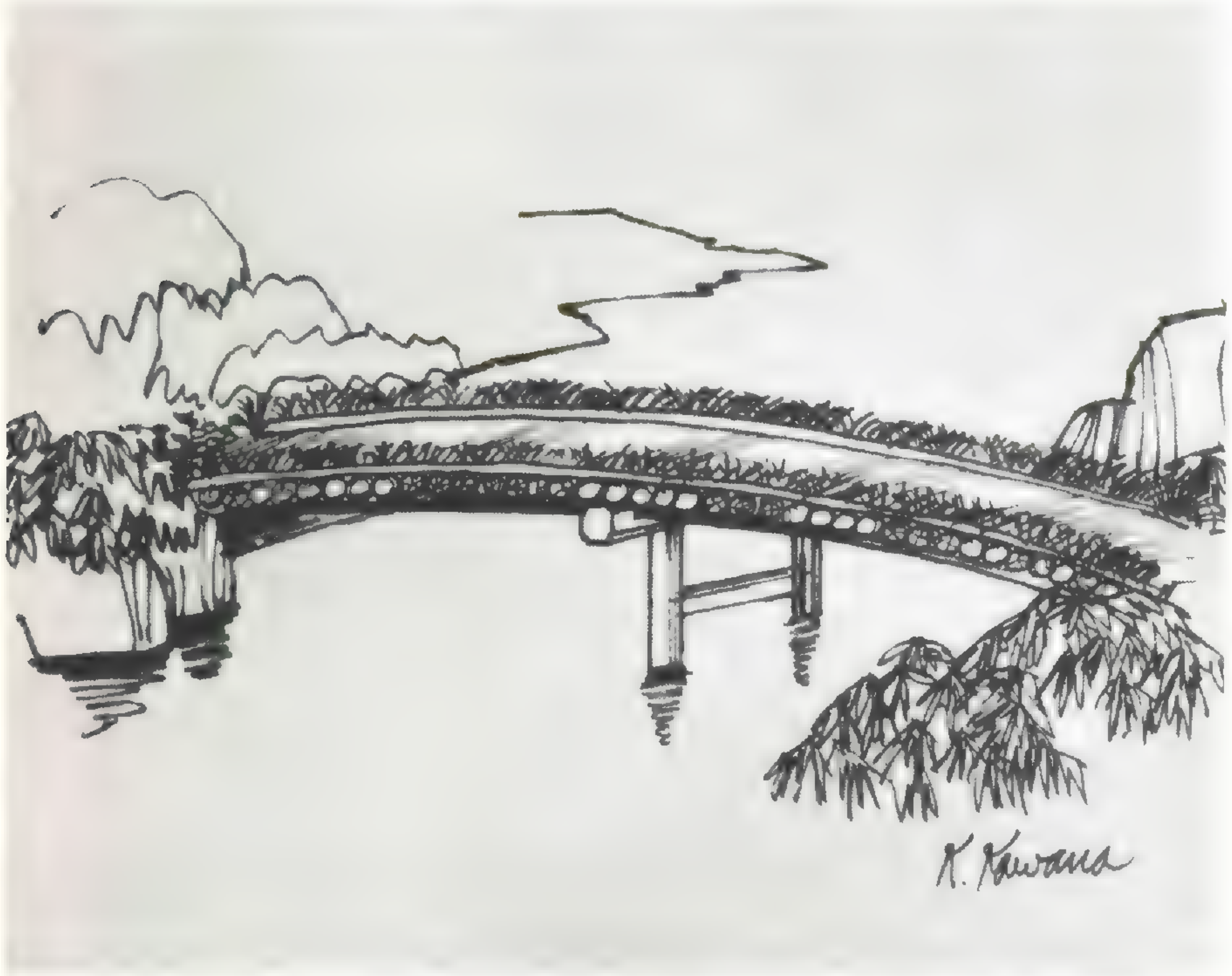
Application forms for the 1975 Pitzman Summer Nature Program May Be Obtained By Calling the Education Department at 772-7600, Sta. 54 or 74.

Missouri Botanical Garden Bulletin



Bridge for Japanese Garden Donated by Chemtech

William F. Schierholz, President of Chemtech Industries, Inc., announced on April 1, 1975 that Chemtech would underwrite the construction of one of the two bridges in the Japanese Garden being developed at the Missouri Botanical Garden. This bridge, a vital element in the first stage of the Japanese Garden, will be built this summer.

Evacuation of the lake is now well under way and will be completed by early summer. During July and August, funds permitting, the two bridges will be constructed, major stones will be placed on the islands and around the shores of the Garden, an irrigation system will be installed, and the planting of Japanese black pines will be begun. It is hoped that the Japanese Garden will be completed by September 1976 as the Garden's major contribution to the Bicentennial.

Chemtech is the largest distributor of chemicals and solvents in the Midwest, and an active participant in many civic causes. The Garden is indebted to Mr. Schierholz and his Company for this contribution toward the development of the Japanese Garden.

William F. Schierholz, President of Chemtech Industries, Inc., with Dr. Raven at site of Japanese Garden where bridge donated by Chemtech will be constructed. Designer Koichi Kowana's drawing of bridge is at left.

'CASA' DANCE CONCERTS AND SYMPHONY PERFORMANCE TO HIGHLIGHT ARTS AND EDUCATION MONTH AT THE GARDEN

May is Arts and Education month, and the Garden is joining with other Fund-member agencies in focusing attention on and urging support of the Arts and Education Council's 1975 campaign.

Activities at the Garden which will highlight the month include two contemporary dance concerts to be presented by CASA, the Community Association for Schools for the Arts. The programs will be performed in front of the Climatron at 2 p.m. on Sunday, May 11, and Sunday, May 25. Director of the troupe is Nolan Dennett, CASA dance instructor and professional performer.

On Friday, May 30, the St. Louis Symphony Orchestra will present a concert outdoors at the Garden at 7:30 p.m. Walter Susskind, Conductor of the St. Louis Symphony Orchestra and Music

Continued on page 2

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May 1975

Director, will conduct.

Arts and Education Fund pledge cards will be distributed during May to all Garden visitors. Contributions to the Fund provide support not only to the Garden but also to these other member agencies: The Adult Education Council of Greater St. Louis; The Community Association of Schools for the Arts; KETC-TV, Channel 9; Little Symphony Concerts Association; Loretto-Hilton Repertory Theatre; Mark Twain Summer Institute; The St. Louis Symphony Orchestra; Young Audiences; The Arts and Education Council; and, as of June 1, The Dance Concert Society. Simply in order to offer member agencies the same support they received from the Arts and Education fund last year, the Fund needs $1,400,000.00.

Members of the Garden and their families and friends are urged to give generously to the Fund, and to attend performances at the Garden this month presented in cooperation with Fund-member organizations.

Walter Susskind will conduct performance by St. Louis Symphony Orchestra on May 30 at 7:30 p.m. at the Garden.

'CASA' Dance Concerts May 11 and 25

PITZMAN SUMMER NATURE PROGRAM – 1975 REGISTRATION FORM

A SENSE OF WONDER An Arboretum workshop for parent and child to provide outdoor sharing activities

_____ $15 per couple (parent and one child 6 to 12)

_____ $5 per extra child. June 30-July 3. 10 a.m. to 2 p.m.

* * * * * * * * * * * *

NATURAL AWARENESS An outdoor Arboretum program for children 8-15. Fee includes bus fare from West County Shopping center. 9 a.m.-4 p.m.

_____ Session A – $17.50 per child. July 28-Aug. 1

_____ Session B – $17.50 per child. Aug. 4-Aug. 8

* * * * * * * * * * * *

NATURAL HISTORY Using the Garden's grounds and greenhouses as living laboratories. Ages 7-16.

_____ Session A – $13.00 per child. 10:30 a.m.-3 p.m.

_____ Session B – $13.00 per child. 10:30 a.m.-3 p.m.

HORTICULTURE FOR CHILDREN A workshop in the basics of growing plants. Ages 11-16.

_____ $16.00 per child. July 21-July 25. 10:30 a.m.-3 p.m.

* * * * * * * * * * * * *

NAME ______________________________

ADDRESS ______________________________

______________________ ZIP __________

PHONE ________________ AGE __________

Check your choice of program and return to Education Department with check enclosed. Additional forms available from the Education Department.

* * * * * * * * * * * * *

May we circulate your name among other registrants in this course to aid in formation of car pools? _____Yes _____No

PRUETT MEMORIAL PLANTING

During March twenty different varieties of azaleas, each represented by twenty-four plants, were planted in the wooded area just west of the Lehmann Building. Two more varieties will be added when the plants are obtained. These azaleas constitute a memorial to Mrs. Hubert J. Pruett who died in February, 1973, and who had worked for many years as a very active volunteer in Tower Grove House.

The planting was made possible by many contributions made in memory of Mrs. Pruett and by a donation from the Ladue Garden Club. Most of the azaleas that have been planted belong to the Kurume hybrids. These hybrids had their origin in Kurume, Japan during the last century. In 1920, the great plant collector, Ernest H. Wilson, introduced into the West from Japan the famous "Wilson Fifty" – fifty of the best Kurume hybrids he found in Japan. The hybrids are now widely grown in Europe and the United States, but most of those the Garden will be presenting are new to the St. Louis area.

In addition to the Kurume hybrids, there are representatives of the Gable hybrids, a group developed by Joseph B. Gable at Stewartstown, Pennsylvania, and introduced around 1927. These are in general larger flowered than the Kurume hybrids. There are also representatives of the Glenn Dale hybrids, developed since 1935 by B. Y. Morrison of the U.S. Department of Agriculture, Glenn Dale, Maryland, and very large flowered. Probably all twenty varieties which have just been planted are new to the St. Louis area.

These azaleas were assembled for the Missouri Botanical Garden by Hugh K. Steavenson and his son of Forrest Keeling Nursery, from sources in Oregon and Alabama. All are expected to be hardy in St. Louis.

The planting of these azaleas is the first step toward the realization of the English Woodland Garden which will be dedicated in honor of the Bicentennial on May 4, 1976 – the 157th anniversary of Henry Shaw's arrival in St. Louis in 1819. The entire woodland area will be involved, and will form a beautiful transition between the Lehmann Building and the Japanese Garden being developed just to the west.

OWEN JACQUEMIN SULLIVAN
AUG. 8. 1978
DEC. 2. 1957
GIVEN IN MEMORY BY HIS WIFE SARAH

DEATH OF SARAH OTT SULLIVAN

Friends of the Missouri Botanical Garden will note with regret the death of Mrs. Owen Jacquemin Sullivan on March 4, 1975. Mrs. Sullivan was a Life Member of the Garden who supported it in many ways.

Especially notable among Mrs. Sullivan's gifts to the Garden were the pink granite drinking fountain (photo above) between the Linnaean Garden and the Floral Display House; this fountain was given in memory of her husband and constructed in 1963. In early 1971, Mrs. Sullivan contributed $15,000 for the renovation of the Desert House, also in memory of her husband. More recently she donated a beautiful silver tea set which can be viewed in Tower Grove House.

The Missouri Botanical Garden is fortunate to have been the recipient of Mrs. Sullivan's generosity, and visitors for many years to come will enjoy the fine features that she made possible here.

NEW GARDEN HOURS

Until further notice, the Garden will be open daily from 9 a.m. to 6 p.m. Hours for The Plant Shop and The Restaurant are from 9 a.m. to 5 p.m. The Garden Gate Shop is open from 10 a.m. to 4:30 p.m. Hours for both the Climatron and Tower Grove House are from 10 a.m. to 5 p.m.

Gardening in St. Louis

GARDENING IN MAY

This month, a great deal of work should be done in order to reap the full rewards of the garden later in the season.

Every effort should be made to control weeds by thorough cultivation and application of mulch immediately when the ground has been cleaned up. A mulch of 2 or 3 inches applied over the ground will prevent further weeds.

Lawns not in good condition will benefit from an additional feeding of fertilizer applied over the complete lawn area. Apply extra fertilizer under trees where grass is growing. Several small applications of fertilizer under the tree are much more beneficial at regular intervals than one heavy application.

House Plants

House plants can now be moved outdoors for the summer. Plants needing repotting should be repotted now. Trim back plants to encourage good breaks and uniform growth. Although many plants will take full sun, they should be moved out gradually from low light areas in the house to areas that receive more light. Ferns, and other foliage plants, do much better in semi-shaded areas.

Plunging pots up to the rim in the soil and then mulching will help to conserve moisture and create a better environment for growth.

Spring flowering shrubs such as Forsythia, Azaleas and Rhododendrons can be pruned back now if flowering is finished. Pruning controls growth and, particularly in Forsythia, prevents it from becoming too large. Immediately following pruning, fertilize shrubs; for best effect use cottonseed meal and bone meal around Azaleas, Rhododendrons and Hollies. Mulch these plants well; do not cultivate around the base of the plant because they are surface rooting.

Remove the foliage from spring flowering bulbs after the plants have flowered 5 to 6 weeks earlier. The foliage may be tied in clumps or removed when it begins to turn yellow.

Continue planting annuals in the garden for good color. Many of these can be purchased as small transplants or seeds sown direct, as in the case of Zinnias, California Poppies, and Portulacas. Prepare the soil well by adding plenty of organic matter and approximately 5 pounds of bone meal per hundred square feet.

Vegetables

Early vegetables should be coming to an end; their area should be reworked with plenty of organic matter incorporated. Come in now with other sowing such as beans, second plantings of lettuce, carrots, beets, cucumbers. Squash may be sown anytime now, in as rich a soil as possible. As soon as the plants come up, start mulching and increase as the plants develop in order to have a good cover of 3 to 4 inches. Any watering required should be done early in the day; water heavily, the equivalent of 1 to 2 inches of rain. Note that watering late in the day tends to encourage more disease.

Inspect plants regularly to see that insects and disease do not become problems. Use spray early in the morning when there is little or no wind to cause drifting. Safe sprays are Rotenone, Pyrethrum, and if necessary – Malathion; follow the directions on the label carefully.

Hobby greenhouses should gradually have the plants taken out and placed outdoors. Be on the alert for insects and make sure that plants are thoroughly sprayed and clean before placing outdoors. When the hobby greenhouse is cleaned out, it should be washed down thoroughly, and benches and areas under them sprayed with a good disinfectant.

If you continue growing plants in your hobby greenhouse, provide shading by applying shading compound or installing black shades over the glass itself. Plants both in the hobby greenhouse and in the home should continue to be given regular applications of liquid fertilizer when they are in active growth. Apply this once every 2 to 3 weeks to flowering plants and about once every 3 weeks to foliage plants.

Perennials

Perennials can still be planted in the garden. Chrysanthemums are best divided early this month; lift up the old clumps and select one or two well rooted stems to put back in. Plant these at the required depth and pinch the top. Redividing makes these flower much better next fall. Remove spent blooms on perennials and other flowers to prevent the plants from forming seed. Perennials such as Arabis, Candytuft, Allysum, and Early Phlox should be trimmed back hard after flowering to prevent their becoming leggy. A light application of bone meal worked in around these plants is beneficial. Then apply mulch immediately to control soil temperature and weeds.

Robert Dingwall
Chief Horticulturist

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M. P. CRONIN, Editor

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GREETINGS FROM THE GARDEN GATE SHOP

The New York Gift Market certainly proved to be a "buyers market" and allowed us a chance to pick up many new exciting items for the shop. "Strawberries" appeared again as a design for everything and certainly the color for the spring was blue. That doesn't exclude, of course, the ever popular yellow green and white. We brought many delightful new designs in cachepots and ashtrays.

New inexpensive pick-up items were everywhere and we bought heyrings, coasters, little wall hang-ups and more. We found several new items for the garden including an excellent line of shears, in various sizes. Also new is the humiditray – perfect for holding an assortment of plants.

The shop abounds with perfect gifts for graduation, weddings, and Mother's and Father's Day. Do come and see us!

MEMBERS INVITED TO JOIN JAPAN-AMERICA SOCIETY TRIP TO ORIENT IN OCTOBER

The Japan-America Society of St. Louis is sponsoring a trip to the Orient this coming October, and Garden Members are invited to participate. The basic tour is fifteen days, and highlights include stops in Tokyo, Kyoto, Osaka, and Nagoya. Optional side trips to Thailand, and Hong Kong are also available.

For all further information, please contact Mr. George K. Hasegawa at 531-4321, or by mail at 5200 Oakland Avenue, 63110.

MEMBERS
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Just a note to say "thank you" to all who returned the March *Bulletin* questionnaire. Your response and input provided much needed information, and allowed us to demographically detail the "typical Garden Member." And guess what? You are certainly not a stereotyped group . . . varying interests, varying ages, and varying suggestions comprise a profile of a heterogeneous membership . . . decidedly atypical. The common and recurring denominator is your love of the Garden and of gardening.

Your interest and enthusiasm is a source of continuing delight. Again, our thanks.

Sally Schiller
Executive Secretary
Members of the Garden

Two eminent scientists, Dr. Frans Stafleu, left, University of Utrecht, and Dr. Richard Cowan, Department of Botany, Smithsonian Institution, visited the Garden recently to use the library's unique collections. Mrs. Carla Lange, above, Assistant Librarian, helped assemble the rare volumes the scientists needed for their research.

RENOWNED SCHOLARS USE RESEARCH FACILITIES OF LEHMANN LIBRARY

Professor Frans A. Stafleu, University of Utrecht, the Netherlands, recently visited the Garden's library to gather information for TL-2.

This James-Bond-like acronym refers to Taxonomic Literature, edition 2. The first edition, published in 1967, has been hailed as one of the most useful reference works for taxonomists published in this century. Coverage in TL-2 will be much more extensive than in the first edition. It will treat works by over 5000 authors and include references to biographies and bibliographies on each as well as information on the location of their herbaria and type specimens.

Prof. Stafleu knew that the library possessed many important volumes, having visited the Garden in 1962. Accompanied by a collaborator, Dr. Richard S. Cowan, Smithsonian Institution, on the recent trip, he was able to accomplish a great deal, working in the spacious Lehmann Building. In fact, there were so many rare volumes to study, that he plans to return for a longer stay in the fall.

One indication of the richness of the library collection is the fact that Prof. Stafleu was able to examine a copy of a Dutch translation of Mark Catesby's "Natural History of Carolina, Florida, and the Bahama Islands" (1731-33) which he had been unable to locate anywhere in Europe.

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DR. GENTRY CONTINUES REPORT ON CERRO TACARCUNA EXPEDITION

In the April Bulletin, *Dr. Alwyn Gentry, specialist in tropical plants and Assistant Curator of the Garden's herbarium, began his report on the exploration of Cerro Tacarcuna, which he described as "one of the world's most inaccessible and biologically most poorly known places." He continues his account of the expedition he led.*

The proposal to explore Cerro Tacarcuna was funded by the National Geographic Society, and the scientific party arranged to meet in Panama in early January. Arrangements were made for the four scientists to fly from Panama City to El Real, at the junction of the Darien's two major rivers, the Tuira and Chucunaque and the nearest commercial air strip. There and at nearby Yaviza we hired men to carry supplies and also made arrangements to hire two dug-out piraguas powered by outboard motors. Food and other supplies for a month in the field had been bought in Panama City and shipped by ocean-going boat to Yaviza where we transferred them to the rented piraguas.

The expedition left Yaviza on the 11th of January bound for the Cuna village of Pucuro at the head of navigable waters on the Rio Pucuro. After a boat trip of two days we reached Pucuro where contacts with the Indians had been made by an expedition member with previous experience in the area. The Indians received us surprisingly warmly and after some haggling six of them even agreed to hire on as additional porters to help carry in the first installment of the 27 fifty-pound loads of supplies and research equipment calculated as necessary for 13 men for a month in the field.

From Pucuro an occasionally used trail leads up the ridge between the Tacarcuna and Tapalisa Rivers and then descends to the old site of Tacarcuna village. This route had been chosen from available maps and previous experience in the area as the most feasible approach to Cerro Tacarcuna. From Tacarcuna the proposed route would follow an old trace up the south ridge of Cerro Mali. Two members of the expedition had reached Cerro Mali with an expedition from Gorgas Laboratory ten years before but between Cerro Mali and Cerro Tacarcuna was only unknown country. Four days of hard walking brought the expedition to Cerro Mali where it was discovered that supplies were going to be inadequate.

Luckily a trail was discovered leading along the Cerro Mali ridge and continental divide and descending the opposite side of the cordillera into Colombia. The six packers from Pucuro were sent back to their village while nine men including Dr. Mori and me set out to resupply in Unguia, Colombia, about 30 miles away. A day later we arrived tired and footsore in Unguia, having completed a crossing of the Darien Gap on foot. Later, carried by burro to the base of the mountains and by the men the rest of the way, the supplies arrived at the hungry camp waiting on top of Cerro Mali.

It was now time to choose a route for the assault on Cerro Tacarcuna itself. A skilled guide and woodsman was sent out to blaze a trail along a spur ridge into the intervening Pucuro valley where a second base camp was subsequently set up at the base of Tacarcuna. It had been determined from the top of Pico Mali that the best route up Cerro Tacarcuna would be along a spur ridge of its westernmost peak. Over a period of several days another trail was worked out from the Rio Pucuro camp up this steep ridge into the virgin forests of Cerro Tacarcuna.

Finally, on 28 January, after 19 days of effort, our advance party reached the summit of the westernmost peak of the Tacarcuna massif. Over a period of several days we moved the base camp from the Pucuro river to an altitude of 5800 feet, 300 feet below the summit of the west peak. Subsequent days of exploration led to still higher peaks we measured as 6300 and 6400 feet. These peaks turned out to be partially connected by narrow ridges; another peak of possibly equal or greater height further east along the massif was not connected to the main ridge system and was not reached at all. This last peak seemed, however, to be vegetatively the same as the peaks we actually climbed.

And what was discovered on Cerro Tacarcuna after all this expenditure of effort? Was the trip indeed worthwhile?

(Dr. Gentry's evaluation of the expedition will appear in the June *Bulletin.)*

CALENDAR OF EVENTS

May 7-11	Mother's Day Plant Sale The Plant Shop, 9 a.m. - 5 p.m.
May 9-25	Goodwill Decorator Showcase 3629 Flora Place 10 a.m. - 4 p.m. weekdays & Sats. 12 noon - 5 p.m. Sundays Contact Mrs. Pat White — 892-3757
May 11 & 25	'CASA' Contemporary Dance Concerts Outdoors, Front of Climatron 2 p.m. - 3 p.m.
May 15	Shaw Neighborhood Improvement Assoc. House Tour — 10 a.m.-5 p.m. Contact John Scholz — 421-4689
May 17-18	Dahlia Plant Sale and Bazaar Museum — 9 a.m. - 5 p.m.
May 24	Museum — 9 a.m. - Noon
May 17-18	St. Louis Horticultural Society Show Floral Display House 1 p.m. - 5 p.m.
May 30	St. Louis Symphony Orchestra Concert Garden Grounds 7:30 p.m. $2.50—adults; $1.50—children ages 6-13 no charge—children under age 6
May 31 & June 1	Rose Society Show Floral Display House Sat. — 1:30 p.m. - 6 p.m. Sun. — 9 a.m. - 6 p.m.

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'KASUGA' LANTERN DONATED FOR JAPANESE GARDEN; CONTRIBUTION OF MORE GIFTS IS URGED

A *kasuga* lantern has been purchased in Japan and donated in memory of Dr. Gilbert R. Killian of Webster Groves, Mo., by Mrs. Killian and her children. The lantern arrived at the Garden on May 1, 1975, and has been placed temporarily just inside the main gate for visitors to see. When possible, it will be permanently installed in the *hiraniwa* or dry garden section of the Japanese Garden.

Excavation has proceeded slowly in the Japanese Garden owing to the wet weather since the first of the year, but should be completed by the end of June. At about that time, some 300 tons of dark greenish stones from Colorado, selected by our landscape architect, Mr. Koichi Kawana of Los Angeles, will arrive. These 200 large stones, several over four tons in weight, will be piled near the lake and then gradually installed at their permanent sites by Mr. Kawana over the succeeding months. At least 32 Japanese black pines will be planted on islands and around the lake this summer, and the two bridges connecting the main island to the shore will be built. As announced in the May *Bulletin,* one of these has already been donated by Chemtech Industries, Inc. The East Central District of the Federated Garden Clubs of Missouri has undertaken to raise funds for the prominent island near the north end of the lake. The Garden is grateful to them, and to Mrs. Killian, for their generosity in helping this project go forward.

The irrigation system for the Japanese Garden, estimated at $20,000, will also be installed this summer, and will make possible the efficient management of subsequent plantings. If all goes well, and sufficient funds are available, the Japanese Garden will be completed as a portion of the Garden's contribution to the Nation's Bicentennial in the autumn of 1976. Members and other friends of the Garden are urged to complete the Japanese Garden by contributing $240 for the purchase and placement of one of the large stones, or $400 for a Japanese black pine from 12 to 15 feet in height. Contributors will thus be able to watch the Japanese Garden grow as a major feature in the St. Louis cultural scene.

Mrs. Gilbert R. Killian of Webster Groves, Mo., and Dr. Raven, Director, with 'kasuga' lantern donated for the Japanese Garden by Mrs. Killian and her children in memory of Dr. Gilbert R. Killian.

Volume LXIII Number 15
June 1975

VOLUNTEERS

CAROL TAXMAN NAMED NEW CHAIRMAN OF VOLUNTEERS

Like all things good and beautiful in the proverbs, Carol Taxman's love of gardening began at home. As a child growing up near Kentucky Lake, she had a garden of her own where she planted and tended wild flowers.

Expectedly, when her parents, Mr. and Mrs. Henry Shapiro of Paducah, brought her as a youngster to visit the Missouri Botanical Garden, Carol's home-nurtured interest in gardening grew into a fascination with all things botanical.

Her life-long love of plants, firsthand experience in cultivating them, and a firm belief that both the Garden and its volunteers benefit from working together, are among the qualities she brings to her position of Chairman of Volunteers. She succeeded Mrs. Richard T. Nelson on May 5, 1975.

Carol has been a volunteer since last September, scheduling tours and classes two mornings a week in the Education Department. She also worked on a history of the Arboretum with its superintendent, David Goudy, thus putting to use not only her knowledge of wildflowers but also her Washington University degree in English.

It was the Garden's Education Department which brought her into the Membership fold three years ago. "In the newspaper I read about courses offered by the Department and I enrolled in 'Gardening from the Ground Up,' taught by Ken Peck. I was not a Member at that time. After several courses with Ken, who is a terrific person and educator — an especially knowledgeable and patient man, I developed a garden at my St. Louis home, and our family became Members of the Garden." Carol's husband is Dr. Robert Taxman, a cardiologist on the staffs at Barnes and Jewish Hospitals. The Taxmans have a son, Steve, 11, and a daughter, Susan, 6.

Carol believes that volunteering is, first of all, "giving of oneself." "Not only is such service personally rewarding, it is also a learning experience," she says. "One absorbs horticultural knowledge by working with Garden personnel and there is singular joy in being around fellow humans who share the same interests and dedication."

She also points out that services given by volunteers are not only "on the surface." Time and money expended by volunteers is real, Carol says. "Money is spent for babysitters, on gasoline or for busfare, and time is given on the phone in organizing activities and in dozens of ways to benefit the Garden. The donation of time itself is a gift.

"It will be my pleasure to help place volunteers properly so that they and the Garden will mutually benefit. I look forward to giving my best efforts to this opportunity for service to a great and growing institution."

VOLUNTEERS NEEDED

The Climatron needs hostesses for both morning and afternoon, especially on weekends. Tower Grove House needs guides. Workers are also needed in the Herbarium; on weekends with children's birthday parties; at the Arboretum; and there is a pressing need for typists. Men and women both are welcome, as are students over 18 years of age for work during the summer months. We require reliability and a minimum of three hours of your time a week. For more detailed information please fill in this form and return to Mrs. Robert Taxman, c/o Missouri Botanical Garden, 2315 Tower Grove Ave. 63110.

NAME ______________________

ADDRESS ______________________

______________________ ZIP ________

PHONE ______________________

VOLUNTEER INTEREST(S) ______________________

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ST. LOUIS STRING QUARTET: From left, Max Rabinovitsj, John Korman, John Sant'Ambrogio, and Darrel Barnes.

St. Louis String Quartet to Perform on Sunday, June 22

The St. Louis String Quartet will perform in concert outdoors at the Garden on Sunday, June 22, at 7:30 p.m. Admission is $1.50 for adults and $.75 for children.

The quartet consists of four performing players of the St. Louis Symphony Orchestra: Max Rabinovitsj, violin; John Korman, violin; Darrel Barnes, viola; and John Sant'Ambrogio, cello.

Formed in the fall of 1967, the Quartet is believed to be the only one in the country to perform in an outdoor environment. Its concerts have attracted overflow audiences to more than 2,000 persons at each performance.

Its members are critically acclaimed musicians. Max Rabinovitsj, concertmaster of the St. Louis Symphony Orchestra since 1967, has participated in the Marlboro Music Festival, directed by Rudolf Serkin, and in the Casals Festival as associate concertmaster.

John Korman joined the St. Louis Symphony Orchestra in 1971 as associate concertmaster, after playing six years with the Boston Symphony Orchestra. He was a performing student in Jascha Heifetz' original master class at U.C.L.A.

Darrel Barnes became principal violist at the St. Louis Symphony Orchestra in 1971. He has played with the Detroit and Philadelphia orchestras.

John Sant'Ambrogio has been principal cellist of the St. Louis Symphony Orchestra since 1968. He performed with the Boston Symphony Orchestra for nine years and participated in 1973 in the Casals Festival in San Juan, Puerto Rico.

In event of rain, the Garden concert by the St. Louis String Quintet will be held in the Floral Display House.

NSF GRANT SUPPORTS SYSTEMATICS SYMPOSIUM

The National Science Foundation recently announced the award of $21,700 to the Missouri Botanical Garden for the continued support of the Annual Systematics Symposium held each October in the Lehmann Building. The award is for a 3-year period and will enable the Garden to bring leading biologists to St. Louis to report on the latest developments in their field of study. Their contributions will also be published in the Garden's scientific periodical, ANNALS OF THE MISSOURI BOTANICAL GARDEN.

The Systematics Symposium has been financially supported by the National Science Foundation each year, except the first, for the last 21 years. Their continued generosity speaks well for the success and quality of the Symposium. The 22nd Symposium is scheduled for 17-18 October and will deal with the topic "Evolution at the Population Level."

MEMBERS
E
M
O

What a beautiful Spring we've had here in the Garden, and, of course, at the Arboretum — and June promises to be the loveliest yet! Many exciting special events are planned . . . a Members' "Evening of Roses" is scheduled for June 28, so do watch for your invitation.

The "Balkan Adventure" (two week tour to Eastern Europe) still has space available. The date of departure has been changed to August 16, with a return on August 30. This trip provides a truly unique vacation experience for our Members, so if you are interested, please contact our office immediately.

Best wishes to all of you for a Happy Summer.

Sally Schiller
Executive Secretary
Members of the Garden

GARDENING IN JUNE

Now that we have moved into much warmer weather, gardening is beginning to taper off. However, the active gardener should get out into the garden early in the morning and during the evening when the weather is cool and keep up the good cultural practices of weed control and other jobs that need to be done on a routine basis.

Bare areas of the garden can still be worked and planted with seeds which will germinate very rapidly and give quick color. Some of these, that I would suggest, are Portulaca, California Poppy, Zinnias, Dwarf Marigolds. With plants like these, the seeds can be sown direct; keep the soil moist until they germinate and grow and come into bloom very quickly giving color in areas where spots would otherwise be drab throughout the summer months.

Roses are now flowering very well and some trimming is needed to remove the dead blooms and, in some cases, cutting back heavier to encourage better growth and to eliminate weak growth on your plants. It is important to leave at least 7 leaves on each stem for the plant to produce a new rose bloom. Cutting shorter than this will tend to weaken your plant. Weak growth should, of course, be pruned out — allowing the strength to go into better canes building these up. You may wish to come in with a feeding of liquid fertilizer to stimulate growth now that the first flush of bloom is over. Apply an adequate amount around the base of each plant. A good method is to come in with 2 to 3 gallons of liquid fertilizer; this is using fertilizer at the rate recommended on the container to each gallon of water and applying approximately 3 gallons around each plant to get it down into the basic root area.

Insect Control

Insect control on the roses, of course, is another important factor that should be kept up. Spray or dust your plants early in the morning as needed, or after heavy rains to control mildew, blackspot, and insects.

Pruning of early spring flowering shrubs should be completed as early now as possible. Remember, that the wood produced from now on is what produces the blooms for next year. Delaying pruning on these plants that flowered earlier to late in the season will mean you will have little bloom next year. Also, if plants are not in as good condition as possible, it might be advisable to come in immediately with a balanced fertilizer such as a 5-10-5 to stimulate added growth at this time. Shoots of Forsythia and other shrubs that come up very rapidly should be cut back before they get too tall to encourage side branching and flowering.

Watering, Mulching

Watering the garden this time of year is important during dry spells. When watering, make sure that it is an adequate watering equivalent to at least 2 inches of rain. Basically, the water is needed to get down deep to encourage deep rooting. Light, infrequent waterings are better to be avoided as this tends to draw the roots up near the surface where the soil is warm and the plants dry up.

Additional mulching should go on where it was applied earlier and in small amounts. Areas that were heavily mulched last year need to have new mulch added to them now. Remove any weeds first and then come in with additional 2 to 3 inches of good mulch over the area. This will tend to keep the soil cooler, eliminate weeds and means much less watering.

Continue planting glad bulbs at 2 to 3 week intervals up until early July for continuous bloom through the early and late fall. Glad corms can still be purchased in many of the garden centers.

Lawn areas that have moss growing means that this is a lack of aeration in the lawn itself. Take a steel rake and remove the moss, and loosen the soil thoroughly to a good depth.

Another good method is to take the fork and go down the depth of the fork giving it a bit of a twist at foot intervals in these areas. Once air can get into the lawn area, grass can do better and moss will not occur.

Vegetables

Vegetables in the vegetable garden should be kept well watered and mulched to keep weeds down and keep the soil cooler. As early vegetables go off, be prepared to come in with new seed immediately. Succession sowing can be very successful and give added production from the garden. Beans, summer lettuce, New Zealand spinach, even second plantings of tomatoes from seed can be sown giving excellent results during late summer or early fall. Cool crops such as cabbage, cauliflower, brussels sprouts should be avoided planting until early September when the weather is cooler. They will do much better and take up less space.

Keep the garden well watered and particularly remember that tomatoes like adequate moisture as do all of the vegetables when fruit is beginning to form and before it begins to mature. If vegetables are allowed to dry out at these periods, quality and flavor is definitely off. Avoid using fertilizers high in nitrogen on your vegetable garden at this time of year. As vegetables are taken up, add extra organic matter in the soil prior to replanting new seed.

Late June is a good time to take cuttings of many of the shrubs and evergreens that you want to get new plants started from. Cuttings taken 8 to 10 inches long should be inserted into a medium of sand or perlite with a little bit of peat moss and kept moist; cuttings using rooting hormone will root in 4 to 6 weeks. Keep moderately moist all the time and out of the hot sun. A cold frame is an ideal area to root these in; keep the frame covered with burlap; dampening the burlap down a couple of times a day will create high humidity and plants will do very well.

Most spring flowering bulbs can now have their tops

NEWLY ELECTED OFFICERS OF THE EXECUTIVE BOARD OF THE MEMBERS OF THE GARDEN: From left, Mrs. Richard T. Nelson, Second Vice President; Mrs. Robert Kittner, Treasurer; Mrs. John Brodhead, Jr., Secretary; Mrs. Charles Wallace, First Vice President; Mrs. Dwight W. Coultas, President; and Ms. Sally Schiller, Executive Secretary.

removed. Cut these off as close to the ground as possible and put the dead tops back into the compost for further decomposition. Remove old flower heads before plants have a chance to form seed. This is true on both perennials and annuals.

In using sprays in the garden, it is best to apply these in early morning when the temperature is relatively cool. Avoid using any sprays when the temperature is up around 85° to 90° as this can cause severe burning. Buy your sprays in small quantities that will be used up immediately.

Roses

Quality roses and shrubs can still be purchased as container grown plants. Select name varieties and in removing them from the container, cut the container away very carefully, loosen the base of the soil ball so that the roots will spread out quickly into the surrounding area. Mix the soil well with plenty of organic matter, water the plants in well. Keep them moderately moist until they become established in the new area.

In taking cut flowers into the house, if these are cut early in the morning and placed in lukewarm water in a cool spot, they will absorb water very rapidly. Let them sit for a couple of hours in a spot as cool as possible before arranging into containers. If, after the arrangements are completed, the plants start to wilt within 24 hours, remove a stem or two, recut and put them in water at approximately 110° in the refrigerator for a couple of hours until they revive; then put them back into the container. A small amount of sugar added to the water of cut flowers will help to preserve their length. Avoid using pennies, aspirin tablets, etc., as these tend to shorten the life rather than to extend it.

This is a good time to visit the Missouri Botanical Garden and observe the new roses and annuals that are beginning to flower so well. A visit to the vegetable garden also can be very rewarding and a pleasant stroll through the Garden is refreshing to everyone.

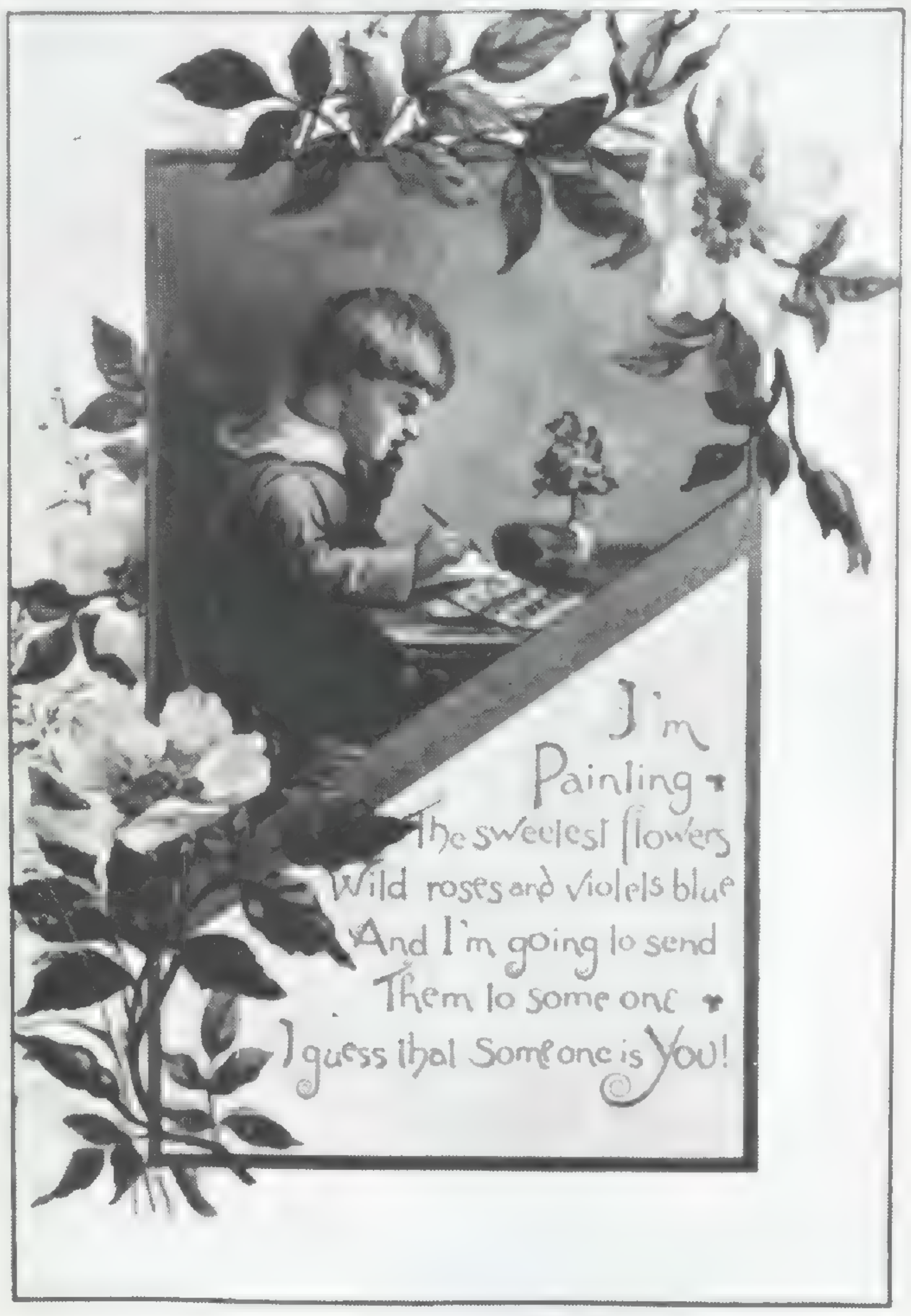
Robert Dingwall
Chief Horticulturist

'AN EVENING OF ROSES' ON JUNE 28; 'ROSE DAY' ON SUNDAY, JUNE 29

Two events on the weekend of June 28-29 will highlight this year's season of roses at the Garden.

"An Evening of Roses," a special party for members and their guests, will be held from 6 to 9 p.m. on Saturday, June 28, on the Garden Grounds. The St. Louis Banjo Club under the direction of Mr. Harry Stege will provide entertainment as visitors stroll through the North and South Rose Gardens. There will be a cash bar. Chairman of the event is Mrs. H. Parker Smith.

The next day, Sunday, June 29, is a public event, "Rose Day." Between 1 and 5 p.m. various entertainments will be performed as the public views the 1600 rose bushes in the "old" or North Rose Garden and over 3000 in the new, South Rose Garden.


I'm
Painting *
The sweetest flowers
Wild roses and violets blue
And I'm going to send
Them to some one *
I guess that Some one is You!

TOWER GROVE HOUSE TO DISPLAY ROSE MOTIF GREETING CARDS

As the season of roses opens at the Garden in June, Tower Grove House will present a month-long display of 48 antique Hallmark greeting cards with pictures, verses and sketches pertaining to roses.

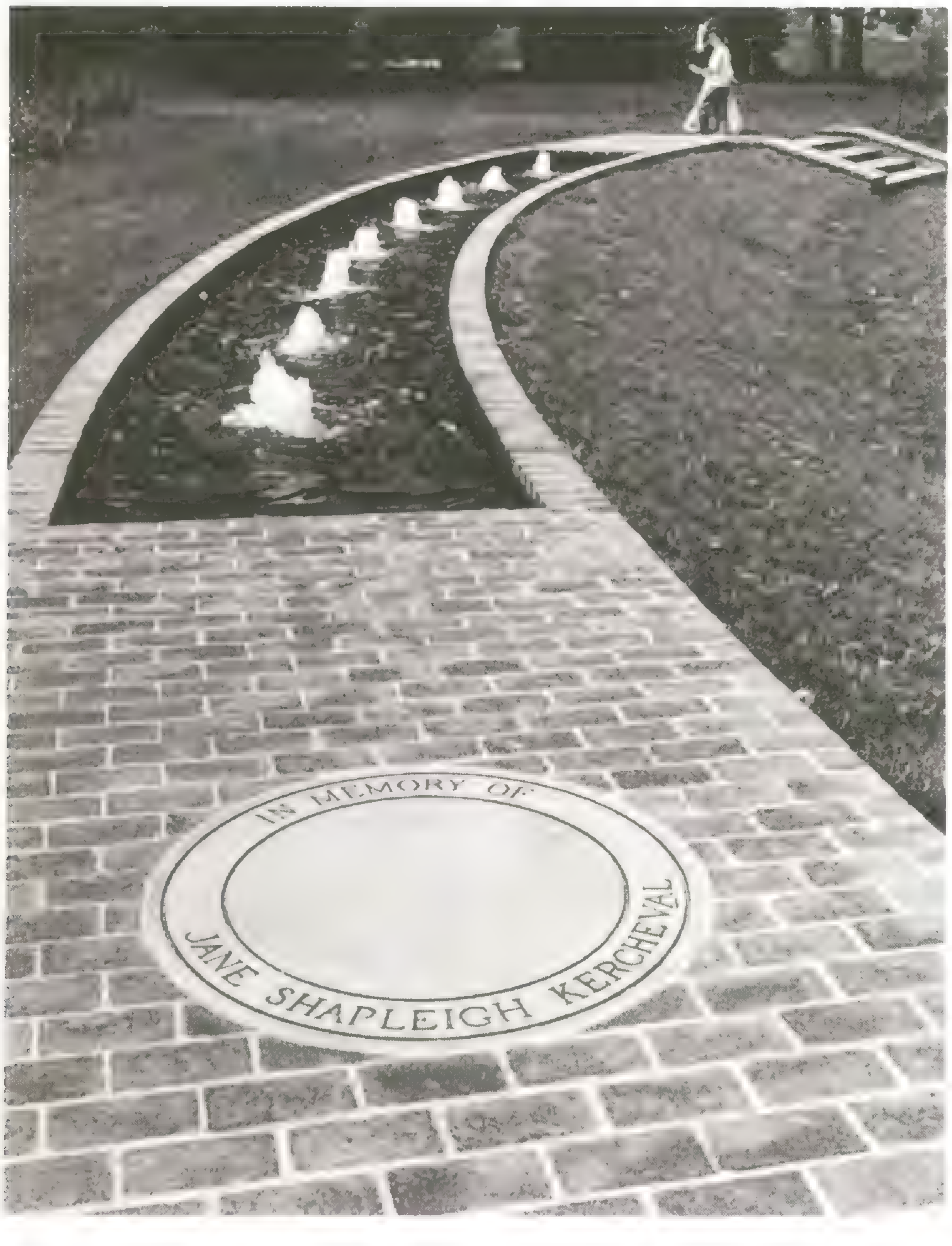
These cards of yesteryear, some of them centuries old, were selected from the Hallmark Collection of Hall's Crown Center, Kansas City, Mo. They are lovely, ornate and old fashioned, reflecting in design and sentimental verse the manners, tastes and preoccupations of especially the Victorian age when life moved at a gentle pace.

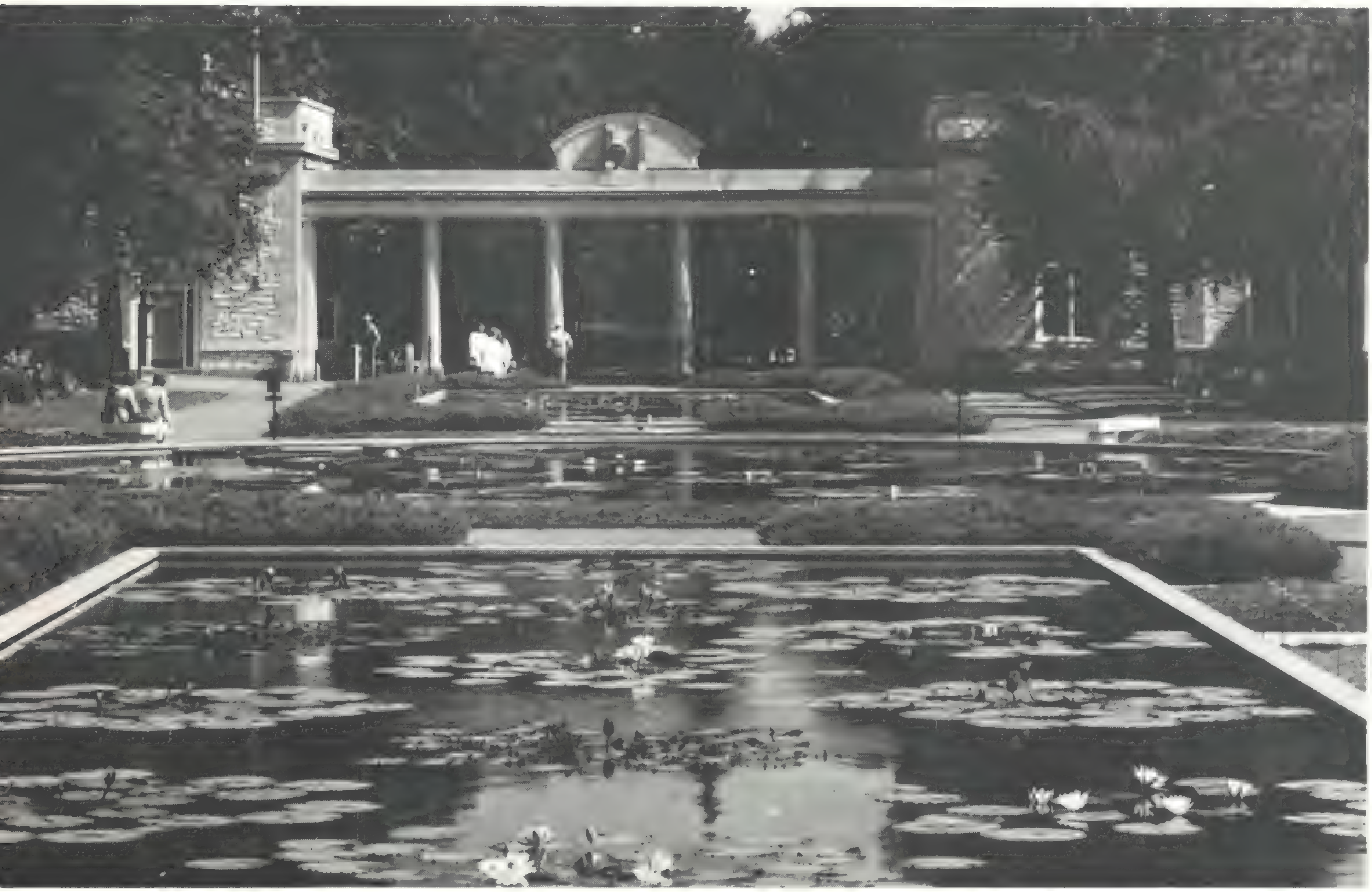
The cards will be displayed in cases on the first and second floors of Tower Grove House.

Mrs. Edward W. Grace
Manager, Tower Grove House

HOW DOES YOUR GARDEN GROW. . .

The growth of the Garden through ways of nature and man is dramatically visible these spring and summer seasons. As flowers go through their growth cycles, construction projects proceed (Below: Shoenberg Fountain and Japanese Garden excavations) while others, such as the Kercheval Fountain (lower left) and the new South Rose Garden (right) have been completed. The fountain is a memorial to Jane Shapleigh Kercheval by the Shapleigh family.





END OF THE EXPEDITION: DR. GENTRY EVALUATES THE EXPLORATION OF CERRO TACARCUNA

What was discovered on Cerro Tacarcuna, the tallest mountain of eastern Panama or western Columbia, which was explored, for the first time, by an expedition led by Dr. Alwyn Gentry, specialist in tropical plants and Assistant Curator of the Garden's herbarium? In previous Bulletin *articles Dr. Gentry explained the purpose of the National Geographic Society sponsored expedition and detailed the obstacles he and his party overcame in reaching "one of the world's most inaccessible and biologically most poorly known places." This final segment concludes his account of the conquest of Cerro Tacarcuna.*

The expedition was a resounding success botanically. We collected several thousand specimens of plants on the expedition representing about a thousand species. Many of these represented big range extensions; many other will almost certainly prove to be new. The summit vegetation was indeed an elfin-type cloud forest as anticipated. But, even more important, the vegetation below the summit turned out to be an oak forest containing most of the same genera and even many of the same species as the oak forests of Central America. Most of these basically temperate plants, like the oaks themselves, were known previously in Panama only from adjacent to the Costa Rican border in Chiriqui Province. Some were also known from the Andes and had been cited as examples of long distance dispersal. Discovery of an isolated but balanced and basically temperate-type flora on Cerro Tacarcuna is strong evidence that the whole flora migrated together as a unit and that past climatic changes must indeed have been sufficient to make possible such migration of temperate elements through the isthmian region.

A second important biogeographic pattern is also apparent in the Tacarcuna plant collections. This is a floristic element which should perhaps be termed a "Serrania del Darien Flora." Most of these species have previously been known only from Cerro Jefe, near the Canal Zone in east central Panama and were considered endemic to that mountain. The occurrence of so many of these "Cero Jefe endemics" on Cerro Tacarcuna and Cerro Mali indicates that they represent part of a relatively homogeneous eastern Panama upland vegetation rather than narrow one-mountain endemics.

Both of these discoveries are of major phytogeographic importance.

Not only plants were studied on this expedition. A number of new or potentially new species of reptiles and amphibians were discovered by Dr. Myers. These groups also show similar distributional patterns to those of the plants with an interesting mixture of Landean, upland Central American, and tropical lowland species. At least one undescribed new species of bird (a quail) was found along with three other species not recognized by the expedition's ornithologist. Whether these will prove to be new or to represent range extensions of South American species remains to be determined.

Also of biologic interest were other faunistic elements encountered on Cerro Tacarcuna. Having never been hunted, game was abundant and formed a major part of the expedition diet.

Also included on our menu was the most feared of all Panamanian mammals — the white-lipped peccary. Traveling in herds of several hundred, these wild pigs remain only in the most inaccessible parts of the tropics but are still accountable for numerous maimings and even killings of people who stumble across their path. A herd estimated to contain 300 animals was encountered in the vicinity of our summit camp. As a consequence, at that camp each man placed his bed on a precarious platform six feet off the ground to protect himself from marauding peccaries at night. Another indication of the respect accorded by skilled woodsmen to the white-lipped peccary is their method of hunting it. First everyone but the man with the gun climbs trees. The man designated to shoot the peccary picks a series of climbable trees and moves carefully from one to another until he is close enough to shoot from the base of one of them. As soon as he makes his shot, he hurriedly climbs the tree without even waiting to see if he has made a hit.

Another plentiful game animal was the giant but inoffensive tapir. Their trails and droppings were common around several of the expedition's camps. One of the less skilled expedition hunters encountered a tapir face to face while walking along a tapir trail close to camp. His gun misfired and the tapir kept coming towards him. Panicking, he turned and ran with the tapir crashing along behind him to the great amusement of the other men.

When other game was scarce, we ate monkey meat (though with decidely less enthusiasm than most of our men). In at least one instance, however, the monkeys were able to turn the tables on an inoffensive botanical collecting party. Normally all the species of large monkeys of the area (white-face, spider, howler) delighted in congregating in the tree tops above members of the expedition to express their displeasure by shaking branches, throwing sticks and leaves, and making unfriendly noises. On one memorable occasion Dr. Mori and I were walking single file along the trail when a troop of spider monkeys descended upon us accompanied by the usual shower of debris. Or so we thought at first: suddenly there was a change in the cadence of falling vegetable matter. After the briefest pause to ponder the significance of this development we knew only too well. A well-placed and sticky covering of most odoriferous monkey feces had been deposited squarely all over Dr. Mori.

Despite such encounters and the difficulties posed by cold mountain nights, frequent and chilling mists and fog and rain, and the restriction at times of our diet to plain boiled rice without even any salt or oil, I am very enthusiastic about Cerro Tacarcuna and the surrounding lowlands of the Darien and Choco. I have already initiated another proposal to obtain funding for additional field work in this area which I regard as potentially one of the most interesting in the world botanically.

ECOLOGICAL SERVICES DEPARTMENT FORMED

Dr. Peter H. Raven announced on April 23 the establishment of a new Ecological Services Department. Dr. William M. Klein, assistant director of the Garden, will serve as chairman of the new department, formerly the Natural Resources Office, until a department head is appointed. This department is primarily engaged in research activities studying and predicting man's impacts on the environment. Richard H. Daley is the assistant chairman of the new department, and Helen S. Parker and Joanne Wedum are project managers. Karen Barnes is the secretary and receptionist. The formation of this department reflects the growing concern over environmental issues and the need to relate the Garden's resources to these problems.

The studies conducted by the department are supported by contracts with public and private agencies. Four major studies have been completed, and two more are under way. An environmental assessment of the Salt River Basin in northeastern Missouri was completed in October of last year. In February of 1975, the Garden's final report on the vegetation of part of the Mississippi and Illinois River floodplains was submitted. Both of these were underwritten by Corps of Engineers' contracts. Union Electric funded the third project, a report on sulfur in the environment which was completed in May and summarized our knowledge of the important forms of this element and their cycling patterns in the ecosystem. The fourth study, funded by the East-West Gateway Coordinating Council, was a literature review on the biology of the greater St. Louis area.

These studies show the increasing activity of the Garden on environmental problems, according to Dr. Raven, and justify elevating this operation to a departmental level. Dr. Klein has directed these projects and will continue to do so on the two new contracts to the Ecological Services Department while he is serving as department chairman.

The two new contracts include, first, the funding for a workshop for researchers, environmental agency personnel, power industry representatives, and leaders of environmental organizations on sulfur and biological systems; and second, the planning phase of a multi-year monitoring study in the Salt River Basin. Both of these are direct outgrowths of the previous studies. The workshop was held on May 30 and 31 and the proceedings will be published in the fall.

The National Environmental Policy Act

> The purposes of the Act are: To declare a national policy which will encourage production and enjoyable harmony between man and his environment . . . to enrich the understanding of ecological systems . . . and to establish a Council on Environmental Quality.
>
> (from Sec. 2, NEPA)

ECOLOGICAL SERVICES DEPARTMENT: From left, Project Managers Joanne Wedum, Helen Sussmann Parker; Karen Barnes, secretary and receptionist; Assistant Director Richard Daley, and Director William Klein who is also Assistant Director of the Missouri Botanical Garden.

In 1969 Congress passed NEPA which requires that federal agencies assess the environmental consequences of their projects by filing environmental impact statements with the Council on Environmental Quality. This has precipitated about 6000 impact statements. But the underlying meaning of the Act is more profound. It is a mandate to extend our understanding of the resources of our country, and it makes protection of the environment a national policy. We have remarkably little scientific information on the complex interactions of social, biological, and physical systems that comprise our ecosystems. This places a special responsibility on scientific institutions to implement this Act.

Clarence Cannon Dam and Reservoir

The Corps of Engineers is constructing a new reservoir on the Salt River and must file an environmental impact statement on the project. In June, 1973, the St. Louis District Corps signed a contract with the Garden to provide the detailed background study for the impact statement.

A consulting team of 20 professionals was assembled to help the Garden design the studies and later to assist in the interpretation of the results. Many of these consultants are nationally recognized scientists. Research technicians were used to do the "leg work" and to collect the "facts and figures" for the study. The results were published in October of 1974. Like many such projects, the Cannon Dam will bring solutions to some problems but will aggravate others. It will provide a recreation site for thousands of tourists in northeastern Missouri, for example, but these people not only bring money into the local economy, they also put demands on public services. The inundation of 36,000 acres of plant and animal communities is a major loss, yet most of these communities will continue to thrive in other parts of the Basin, and the Reservoir will provide habitat for still others. Many areas of farmland will be flooded, but these will be partially offset by decreased flooding on downstream farmland. The major conclusion of the study is that such public works projects are neither all good nor all bad. The study goes beyond most in synthesizing the diverse inputs of many scientists, but it underscores the inadequacy of our information upon which to predict impacts and make wise decisions on public works projects.

The Mississippi-Illinois River Study

Even before the Salt River study was concluded, the Garden entered into another contract with the Corps of Engineers in May, 1974. The study was conducted in the floodplains of the Upper Mississippi and Lower Illinois Rivers. The purposes were to map and describe the plant communities and to predict the major changes which will result from the continued operation and maintenance of the nine-foot navigation channel. The Garden's report will become part of the Corps' impact statement on this navigation channel.

We found that only a small amount of native vegetation remains in these floodplains. We were able to measure the species composition of the forest and marsh habitat as well as elucidate the successional patterns. We found that certain plant communities such as marshes have been encouraged by past Corps' activities, but that the overall effect of management has been to reduce the total amount of native vegetation principally due to flood protection levees which make forested land arable.

Sulfur in the Environment

In September of 1974 work was initiated on a contract from Union Electric Company of St. Louis to assemble a state-of-knowledge review of the biological effects of sulfur on ecosystems. Experts in biology and chemistry from across North America were selected to submit articles to be edited and compiled by the Garden. The report, "Sulfur in the Environment," was released the first of May and points out that compared to other cycles, we know relatively little about the way sulfur travels through the ecosystem. We do know, however, that man's contribution to atmospheric sulfur compounds is approaching the total contribution of natural sources. The report brings together the results of many individual research efforts which must be related if we are to unravel the sulfur cycle and determine man's impact on it. This is a timely research contribution which will serve as a basic reference in years to come.

St. Louis Area

The East-West Gateway Coordinating Council of St. Louis contracted with the Garden in early 1974 to compile a bibliography and to provide a synopsis of the area's biological systems. The report is designed for the land-use planner and manager. It is an overview of the area's biology and can serve as a basis for mapping the habitats of the seven county area. The indexed bibliography of about 2500 references on the flora and fauna is provided for the scientist and advanced layman. It is a monumental task to interpret scientific information in ways which are readable by the layman yet without sacrificing accuracy. This is made even more difficult when the scientific data are so inadequate. This report, like the sulfur study, documents not only what we know, but equally important, the gaps in our knowledge.

Each of these studies differs in fundamental ways from the others. The Cannon Dam report is a synthesis of information collected specifically for this study from many different disciplines and is written as a document for future planning. The Mississippi-Illinois study, in contrast, concentrated on a single problem, that of understanding the structure and dynamics of floodplain communities. In the sulfur study, no new research was sponsored but the many individual studies relevant to the larger question of man's total impact on sulfur cycling were assembled for the first time. The St. Louis area study provided the opportunity to assemble technical biological literature and to present it in ways that are meaningful to land-use planners.

These studies represent a major contribution to our understanding of man's impact on his environment. Perhaps their greatest value is in proving that the Garden can provide a forum for the exchange of ideas on current environmental issues. The establishment of the Ecological Services Department manifests the Garden's commitment in this critical area of applied ecological research.

Richard Daley

WHEELCHAIR DONATED IN MEMORY OF HERBERT J. ERNST

A wheelchair has been donated to the Garden by the family of Mr. Herbert J. Ernst, a frequent visitor and a Member of the Garden for many years, who died January 17, 1975.

Accepted in April in Mr. Ernst's memory, the wheelchair is one of three now available at the Main Gate on request.

Member of
The Arts and Education
Fund of Greater St. Louis

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M. P. CRONIN, Editor

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$5.00 per year. $6.00 foreign.

NEW CONTRIBUTING MEMBERSHIPS
April 1975

Garden Tower East Community
Mrs. Nancy Meeks Gladney
M/M Henry E. Rathert

NEW FAMILY MEMBERSHIPS
April 1975

Mr. Robert G. Adams
M/M William T. Anthes
M/M Frank Arbik
Dr./M David J. Armstrong
M/M Wm. G. Bachman
M/M David Baer, Jr.
M/M John G. Baker
M/M Robert J. Balske
M/M Ralph R. Bantle
M/M L. Scott Barnard
M/M Francis M. Barnes, III
M/M John H. Basler
M/M Charles Bates
M/M Elmer L. Bauer
M/M Gene K. Beare
M/M Freddie Bejoile
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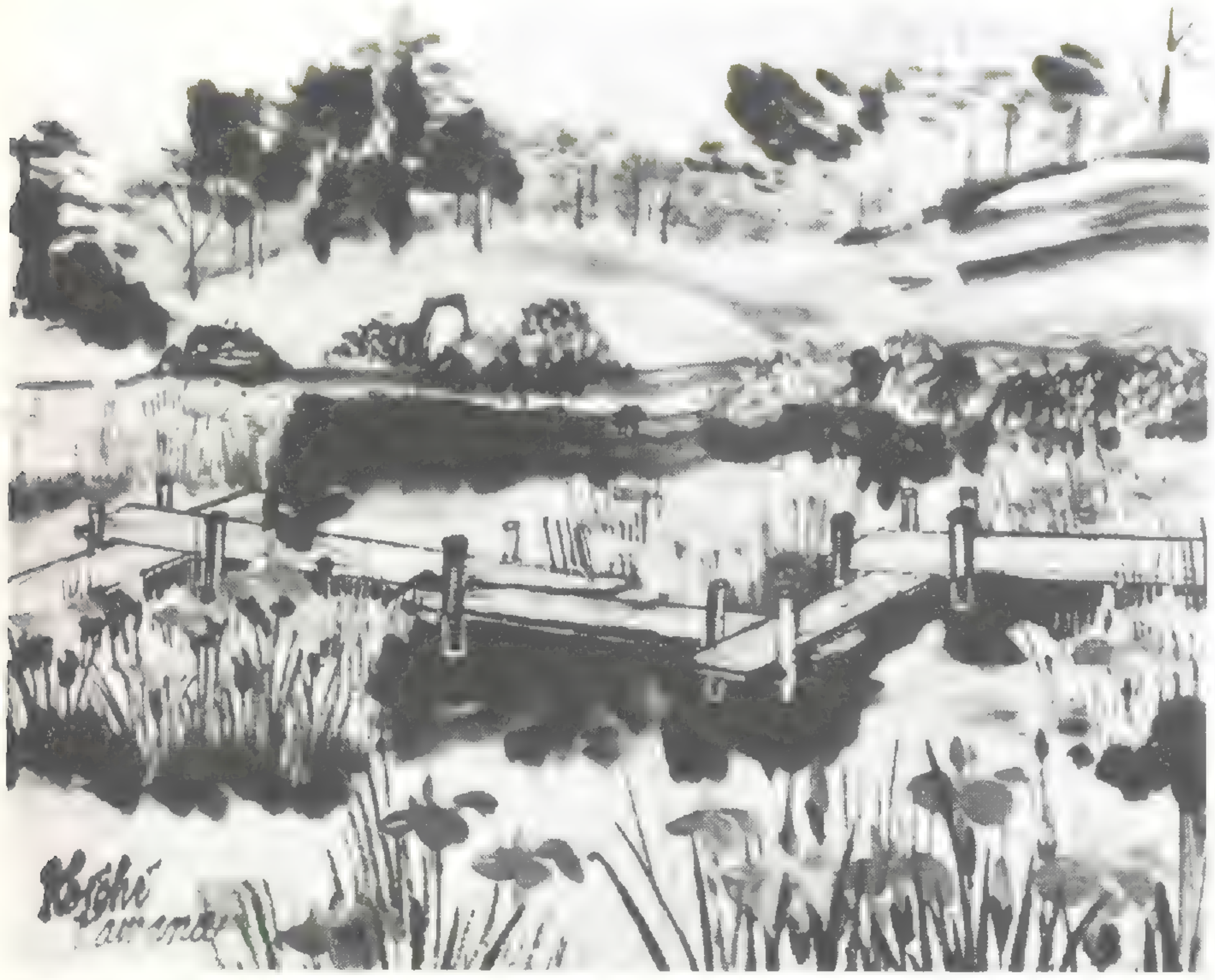

Designer Koichi Kawana's sketch of the Yatsuhashi Bridge planned for the Japanese Garden at the Missouri Botanical Garden.

EVENING WALKS IN THE GARDEN:
A Short Course on Plant Materials

Enjoy the Garden in the early evening hours and acquaint yourself with a select variety of plant materials. This course meets once and is intended to be an introduction to about 20 outstanding deciduous and evergreen trees and shrubs. Instructors Robert Dingwall and Kenneth Peck will point out basic plant forms and will discuss the relative merits of each plant selected for the walk. At the termination of the walk, ice-cold lemonade will be served in the education wing of the Lehmann Building. In the event of rain on a given date, the walk for that date will be given one week later. To register, call the Education Department at 772-7600 Sta. 41.

Section A-Tues., July 15 — Section B-Thurs., July 17
Time: 7 p.m. till dark. Enter at Staff Entrance,
2323 Tower Grove Avenue
Fee: Members — $3.00 Non-members — $4.00

Kenneth Peck
Acting Head of Education

The Yatsuhashi Bridge

As the excavation for the enlargement of the pond progresses, and the dream of the Japanese Paradise in Mr. Shaw's garden is beginning to take shape, many of us are looking more closely at Mr. Koichi Kawana's beautiful plan. It appears that we are to have, in principle, what is known as a "tour garden," the garden designed to be walked in, the last formal phase of the Japanese garden which emerged clearly in seventeenth century Japan, during the Edo period (1615-1867). Though composed of various traditional elements, it was itself a new concept. The oldest, the garden of Katsura Detached Palace, was described merely as a "pond surrounded by a footpath" and is in what we would now call free form.[1] "The 'tour garden' may be experienced only by walking through it. One new view emerges after another. Remembered details of scenes passed merge in unexpected combinations as one pauses and looks back. The other side of the lake along which one has just come, now seems familiar, yet new, as each turn becomes a revelation, and each pause becomes an occasion for new beauty."[2]

"Such a continuous landscape garden is then a dream. One is a spectator at an experience which opens and closes, which speaks and is silent. Or perhaps, the effect is more like that of music where surprises can so easily turn into recognition. As in the Sonata form, there are developments and recapitulations, passages of imitation and a strong sense of drama."[3]

In discussing the tour garden Mr. Teiji Ito says that one's appreciation will be considerably enhanced if one has a good classical education, because one is expected either to recognize or provide a suitable literary image. For example, Mr. Koichi Kawana explained that an island in the lake may be called Horisan, referring to the mythical home of the Immortals, or it may be called Shumisen, referring to the World Mountain, the axis between Heaven and Earth. Smaller islands are named for the crane and the tortoise, symbols of longevity.

Continued on next page

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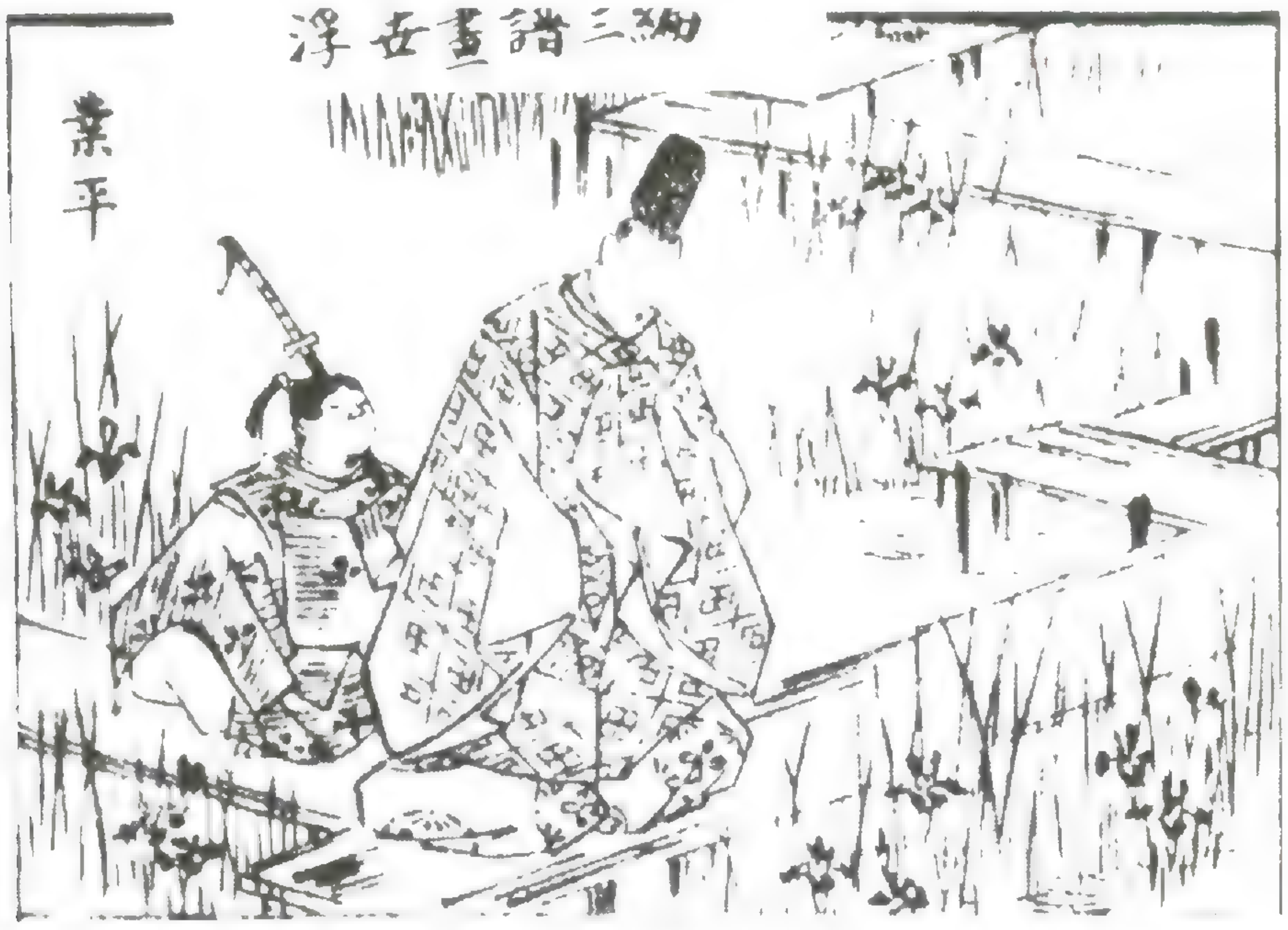
Among the many traditional elements designated on Mr. Koichi Kawana's plan is a Yatsuhashi Bridge over an iris garden. Both Rekugi-en and the Tisuren-so gardens had bridges named Yatsuhashi. And it may add to the interest and enjoyment of the visitor to the garden here to know that it is named for the famous bridge of classical renown over the Azuma River in the province of Mikiwa. Upon crossing the bridge one stopped to admire the irises planted at its foot. To do so recalled the anecdote concerning Ariwara Narihira (825-880), one of the great figures of Japanese literature, hero of the *Tales of Ise.*[4] Anonymous and of uncertain date, but safe to assume that few, if any are more recent than 950, *The Tales of Ise* consist of more than 200 poems, each of them provided with a fictional prose setting. The poems include most of the surviving works of Ariwara Naribira.

While standing on the bridge one remembered also the bridge-and-iris motif so frequently recurring in works of art



Tales of Ise
9

Once a certain man decided that it was useless for him to remain in the capital. With one or two old friends, he set out toward the east in search of a province in which to settle. Since none of the party knew the way, they blundered ahead as best they could, until in time they arrived at a place called Yatsuhashi in Mikawa Province. (It was a spot where the waters of a river branched into eight channels, each with a bridge, and thus it had come to be called Yatsuhashi — "Eight Bridges.") Dismounting to sit under a tree near this marshy area, they ate a meal of parched rice. Someone glanced at the clumps of irises that were blooming luxuriantly in the swamp. "Compose a poem on the subject, 'A Traveler's Sentiments,' beginning each line with a syllable from the word 'iris' (kakitsubata)," *he said. The man recited,*

Karagoromo	*I have a beloved wife,*
Kitsutsu narenishi	*Familiar as the skirt*
Tsuma shi areba	*Of a well-worn robe,*
Harubaru kinuru	*And so this distant journeying*
Tabi o shi zo omou.	*Fills my heart with grief.*

They all wept onto their dried rice until it swelled with the moisture.

All together the appreciation was to be much deeper than glancing at the bridge and iris would ordinarily afford. Just as the Japanese have always heightened and refined when copying from nature, so, when copying from art, the merest indication is sufficient.[6]

"The Japanese, at times were feudal; at all times they were aristocratic. Their art developed along narrative and decorative patterns, rather than philosophical. Romance and legend, rather than ethics and history, appealed to the taste of the noble and warrior. Formal, not intellectual, theirs was an art dependent on faith and feeling, rather than reason and science."[7]

Nothing is ever lost in Japan. It is a great storehouse of treasures. The Japanese constantly rework and renew their traditions. The St. Louis Community will be greatly enriched by the birth of the new traditional Japanese garden here.

Adeline Boyd
Lecturer, Department of Chinese and Japanese
Washington University, St. Louis, Missouri

FOOTNOTES

[1] Ito, Teiji, *The Japanese Garden, An Approach to Nature,* Yale University Press, New Haven and London, 1972, p. 188.

[2] *Ibid.,* p. 189.

[3] *Ibid.,* p. 191.

[4] *Ibid.,* p. 194.

[5] McCullough, Helen Craig, tr., *Tales of Ise,* Stanford University Press, Stanford, Calif., 1968.

[6] Ito,Teiji, *op. cit.,* p. 194.

[7] Lee, Sherman E., *Japanese Decorative Style,* Cleveland, 1961.

ACKNOWLEDGMENTS

Permission to reprint Section 9, pp. 74-76, from *Tales of Ise,* translated by Helen Craig McCullough, was granted by the Stanford University Press, Stanford, California.
Permission to reproduce the woodcut, Fig. 78, P222, from *Japanese Botany During Period of Wood-block Printing, by Harley Harris Bartlett and Hide Shohara, was granted by Dawson's Book Shop, Los Angeles, California.*

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M. P. CRONIN, Editor

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Remembrance of Parties Past: Henry Shaw's Birthday

By Maburl Schober

(Mrs. Schober is Chairman of the Herbarium's Volunteers for the Missouri Botanical Garden Botany Department. She is a graduate of Northwestern State College of Louisiana, where she received her degree in Journalism, and for many years worked for the **Shreveport Times** *as a writer and then as editor of the Women's News Features.)*

Along with all the hoopla for the nation's Bicentennial, a little hoopla would not be amiss for another anniversary: 175 years ago on July 24, 1800, Henry Shaw was born in Sheffield, England.

And indeed such an occasion will not pass unnoticed, for the Missouri Botanical Garden is planning an observance of its benefactor's birth. The question, of course, is what would be appropriate? How would Henry Shaw celebrate it himself if he were alive today?

One can only conjecture as to what of the popular culture would have been adopted by Henry Shaw. From the descriptions of the man by his contemporaries, however, it is likely that the only remarkable change would be that his guests would arrive by automobile, rather than by carriage.

After arriving in St. Louis in 1819, Shaw busied himself with making his fortune, and correspondence among the family during that period doesn't indicate that Henry or anyone else observed his birthday in any way.

Between 1836 and 1851, Shaw was in Europe much of the time. Again, there exists no record of his manner of celebration. (During this period his sister, Caroline, moved to St. Louis from Rochester, N.Y., to handle Henry's business affairs in his absence. She married a Mr. Morisse and lived here until her death.)

Genial Board, Ancient Vintages

During the 1850s, however, Shaw completed both Tower Grove house, his country home, and his town house and thereafter settled down to life in St. Louis. His town house became one of the city's social centers, with large dinner parties especially for noted theatrical personalities appearing here.

The "Globe-Democrat" carried an account on Oct. 8, 1888, of one of Henry Shaw's parties, a dinner for Col. Patrick Gilmore who is described as a popular musical director of the day.

Guests arrived at noon and were shown through the autumn-robed garden. It had been decided at the last minute to invite no ladies because Mrs. Gilmore was ill.

"Toasts were pledged from the renowned cellars of Mr. Shaw, of which the equal is scarce extant in point of almost ancient vintage," says the article. Appropriate remarks were given by John G. Priest, William H. Thompson, Charles E. Barney, George I. Barnett, James J. Kaime and Judge Gabriel Woerner. D. H. MacAdams spoke on, "The Mission of Music."

Henry Shaw
July 24, 1800 — August 25, 1890

Finally, in parting, Judge Normile proposed a toast to Mrs. (Rebecca) Edom (Shaw's housekeeper), her niece, and other ladies who assisted with the luncheon "to the delightful satisfaction of the gentlemen," who also included Joseph Franklin and John Rankin.

"The revelers rose from the genial board at 7 p.m."

Celebration of 81st Birthday

The "Missouri Republican," which one historian terms the leading paper in the West at the time, carried an account in its July 25, 1881, edition of Shaw's 81st birthday celebration.

Shaw's friends by then had adopted the custom of calling without invitation at his Tower Grove residence on his birthday, "knowing Mr. Shaw's liberal hospitality which no one who has been present at one of these occasions will ever forget. Mr. Shaw is as genial as a host as he is entertaining as a companion."

The day was rainy, however, and some sent regrets because of the precipitation. Those who came found his house lighted by Japanese lanterns, as was apparently his custom for this occasion. A flowery welcome (quite literally) was composed on the front lawn of red flowers (geraniums, perhaps?) spelling, "Salve," in large letters.

A contemporary has described Henry Shaw as a lover of music, although not learned in the field. And, the account says, "Farther from the door Postlewaite's band was stationed, playing an occasional air," (under a canopy perhaps to protect them from the elements, although the account does not so indicate.)

An elegant lunch was spread in the house, says the writer, but he neglects to describe the menu.

Among the guests calling in the evening after the rain had stopped were three physicians, Drs. Thomas, R. J.

and P. S. O'Reilly, Mrs. J. C. Ulrici and Julia Ulrici, N. W. Cameron, J. H. Sheets, John D. Taylor, Ernst Morisse, Louis Hodde, B. W. Alexander, and representing Mayor Ewing, Commodore Lyndon A. Smith.

After most of the visitors had gone, a few of Shaw's old friends remained for several hours to reminisce about "the old days" in St. Louis. "His memory of them is strong and his conversation interesting," the reporter noted.

Evening Reminiscences, Daniel Webster

One of the gentlemen present recalled Daniel Webster's visit to St. Louis to speak at Lucas market and at Camp Springs in the summer of 1835.

A hunting excursion was planned across the river in Illinois for the honored guest's amusement. There were plenty of deer in the Illinois bottoms then, the account says. An advance party was sent to dig long pits in which to barbecue the deer, and on the appointed morning, guests, hosts, dogs and guns were ferried across.

The hunters bagged five deer and barbecued three, one of which, the unnamed gentleman recalled, was put on the table horns and all.

The party was rather dull until Webster had drunk about a bottle and a half of wine. "Then he commenced. I have never heard such a talker, before or since. Stories! He told one after another, keeping the table convulsed. I have never been able to get some of them out of my head," he continued, and the majority, he said, were unfit to be told in the company of ladies. As it is likely that the few close friends who remained on that evening were men, the gentleman no doubt related some of Webster's choice stories that failed to make it into print.

Finally time arrived to depart, and Webster's hosts, thinking it unsafe to let him mount his horse to return, loaded him into a buggy with a "Maj. C." All was well until Webster's servant approached with the horse Webster had ridden into camp.

Daniel Webster would not be dissuaded from trying to climb out of the buggy. "No, no, gentlemen," he is quoted as saying, "those people at home shall never have it to say of me that I went hunting from St. Louis and got so drunk that I could not keep my saddle."

His hosts, seeing no alternative, loaded him onto his horse where he, "straightened up and stuck on until we got to the ferry."

Then Shaw's guest commented that he believed himself to be the only member of the hunting party still living, no doubt prompting Henry Shaw to reflect on the many people he had known throughout a long life who had preceded him in death.

Shaw's 90th Birthday

Nine years later Henry Shaw observed his 90th birthday. It would be his last. An account of the day says that many well wishers called. Although physically weak, he received his guests in the drawing room of Tower Grove House.

One month later Shaw died in his simply appointed bedroom overlooking the grove of sassafras, the only trees which grew on the tall grass prairies when Henry Shaw established his now world-famous botanical garden. He left a memorial which has endured long after all the tributes paid him during his lifetime have been forgotten.

* * *

(With grateful acknowledgement of assistance provided by James Reed, Chief Librarian Missouri Botanical Garden, and Nancy Smith of the Missouri Historical Society Library.)

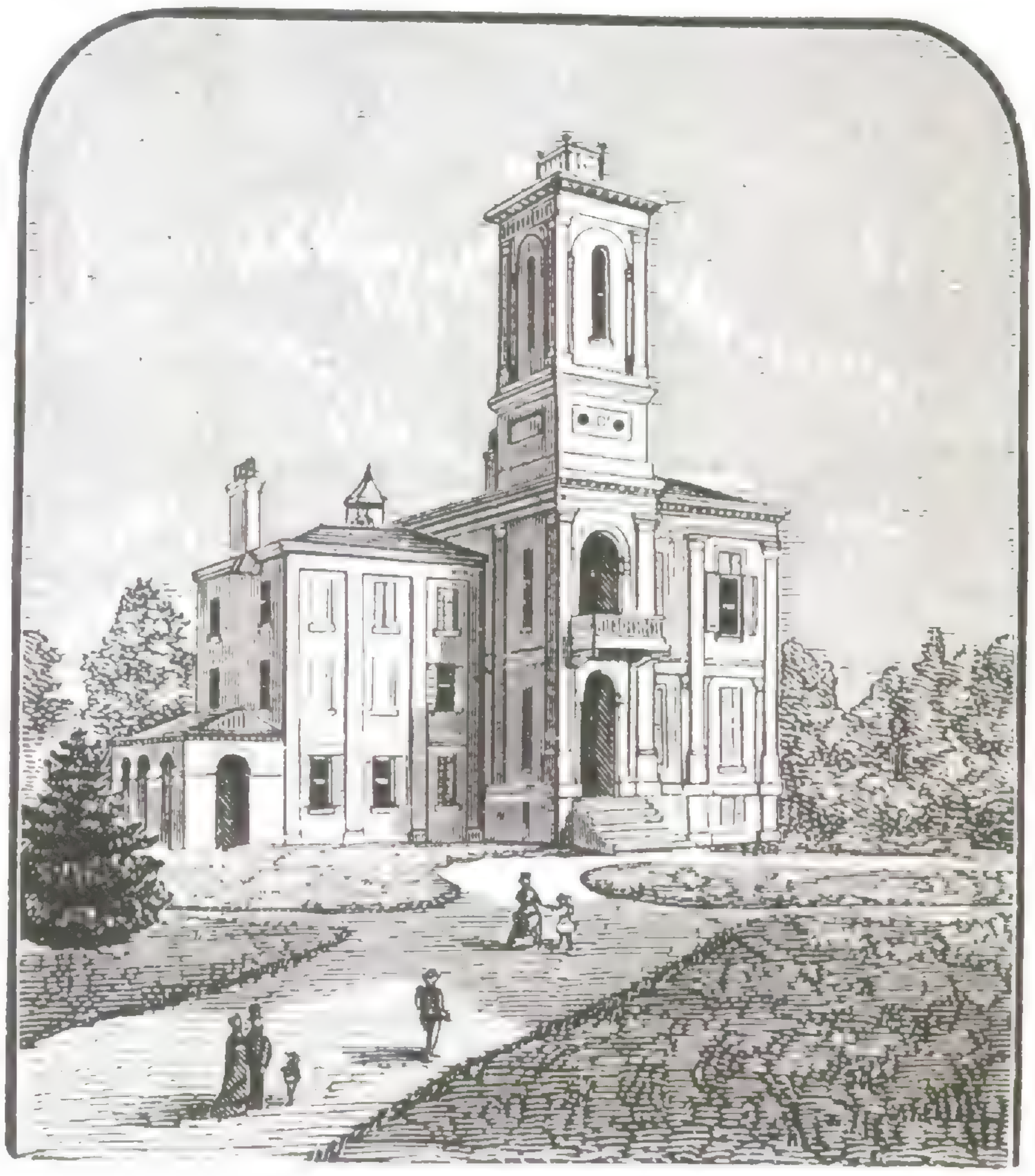
CELEBRATION OF 175th ANNIVERSARY OF SHAW'S BIRTH IS PLANNED

Thursday, July 24, 1975, will be the 175th anniversary of the birth of Henry Shaw, founder of the Missouri Botanical Garden.

Activities planned to observe the occasion center around Mr. Shaw's country home, historic Tower Grove House. Mrs. Edward A. Grace, Manager, says that spiced lemonade and birthday cake will be served in the country home area by young hostesses dressed in Victorian costumes. The recipe for the lemonade comes from "The Shaw House Cook Book."

Sounds of an old-fashioned music box will add to the festive air both in and outside the House. Mr. Shaw loved music, Mrs. Grace says, and she hopes to provide additional entertainment at various times of the day. Final plans will be announced in the news media.

"Birthday presents" to be awarded to every 175th visitor to the Garden will include free memberships and certificates for plants or gifts from the Garden, or area merchants.



JOHN FEUGH, PERSONAL SERVANT TO HENRY SHAW

Henry Shaw, as a person, is a source of interest to everyone who visits his extraordinary garden. What was he really like, this man who posed for his own mausoleum sculpture? Clearly, from all that Shaw left for us to enjoy, from all that we know of him from historians, from his own will, from the written reminiscences of those who knew him first as a hardware dealer and later as an extremely farsighted philanthropist, Shaw was far from ordinary.

However, having had no wife or children, the more private side of Shaw's life remains something of a mystery. Even so, there was at least one person who knew him at close range in his later years. That person was a black man named John Feugh. Feugh, who was hired by Henry Shaw in 1879, was his personal servant for the last ten years of his life. After Shaw died, John Feugh remained in the employ of the Missouri Botanical Garden — as caretaker of the Shaw Museum — until his own death shortly before 1940.

Lived on Grounds

John Feugh was given a house on the grounds by Shaw and he lived in it for 35 years. His was a house near the farm Shaw had originally planted as an integral part of his estate and Feugh moved away from the Garden in the late 1920's when the farm was no longer functioning.

John Feugh was interviewed at length about his memories of Henry Shaw by reporter Walter J. Monaghan for an article published in the *St. Louis Globe Democrat Sunday Magazine* on October 9, 1932. The story of how he happened to come to Shaw's attention and to be hired by him gives us at least a glimpse of Henry Shaw's character and sense of values. Feugh, a young man of 26, had come to St. Louis from rural Georgia, looking for work. Penniless, he spent his first night in the city with a woman who took in the homeless. She suggested that he see Mr. Shaw who was then living in his town house at 7th and Locust streets.

"Mr. Shaw," Feugh recalled, "asked me where I was from, and when I told him, asked me if I could read and write. He was surprised when I told him I could, because then Negro boys from the South who had any education at all were rare. He hired me and told me he wanted the windows of his house washed first . . . in two days I had it done. I was a green country boy working for an employer whom I was liking a little more all the time.

"Before very long I was Mister Shaw's messenger. I ran all his errands . . . Everyday I went to the bank with his deposits, and if you and I had the money I took to the bank for Mister Shaw, each of us could have a pretty nice garden ourselves."

Feugh Moved With Shaw

John Feugh

Photo courtesy of Mildred Goodwin

When Shaw moved to Tower Grove House permanently, John Feugh went with him and there he remained, until Mr. Shaw's death and until his own nearly 50 years later. He described to Monaghan some of what he did at the country estate: "A great many of these big trees you see here I hauled in my wagon behind a pair of Mister Shaw's frisky bays from the depot to the places where they were to be setout...Yes, sir, I have seen a lot of these trees come from places a long way off and have planted them here myself . . . It was my job, too, to go and get the mail and distribute it. I still do that. I was also the farm foreman for a long time."

Fastidious in Dress, A Loyal Employe

When Feugh was interviewed by the *Globe-Democrat* he was 79 years old. The article describes him as "fastidious in his mode of dress as well as in his appearance." Feugh explained to the reporter that he was careful to maintain his standard of dress and grooming because Shaw had once remarked to him that he had "always been gratified to note the care" to which he gave his appearance. The article went on to emphasize the great esteem in which Shaw was held by John Feugh and the loyalty with which he carried out his employer's wishes in his final position as caretaker of the museum.

If Shaw's intention was that his personal habits remain private, then he chose well when he chose John Feugh as his servant. Though he tended constant personal service to Shaw during his last years, Feugh was never known to impart any except the most discreet information to museum visitors. As reporter Monaghan put it: "In case there is anything regarding the life, the fine qualities, the methods of Shaw, that you would like to know, John Feugh will in all probability be able to supply the information, provided it does not touch too deeply the purely personal side of his life, which is a sacred trust, as it were, reposed in the fealty and the loyalty of a grateful employe."

THE GLAMOUR OF THE QUININE TREE

In his article on quinine Dr. John Dwyer, Research Associate at the Missouri Botanical Garden and Professor of Biology at St. Louis University, tells how the Garden founded by Shaw has fulfilled a humanitarian role as well as a scientific one in helping to describe the limits of botanical specimens such as Cinchona, *the plant that provided the cure for the disease which killed Henry Shaw. Dr. Dwyer has done extensive field work in North and South America, especially Central America in Panama and Belize, and is well qualified to speak about both the scientific and humanitarian aspects of his botanical collections.*

There is a famous line from Keat's *On First Looking into Chapman's Homer* in which the poet speaks of Cortez's first view of the Pacific Ocean: "Silent, on some peak in Darien." How awed Cortez must have been — one of the first white explorers to happen upon the world's most expansive body of water! From this vantage point in Panama the conquistidores were to open up the whole Pacific Coast of North and South America.

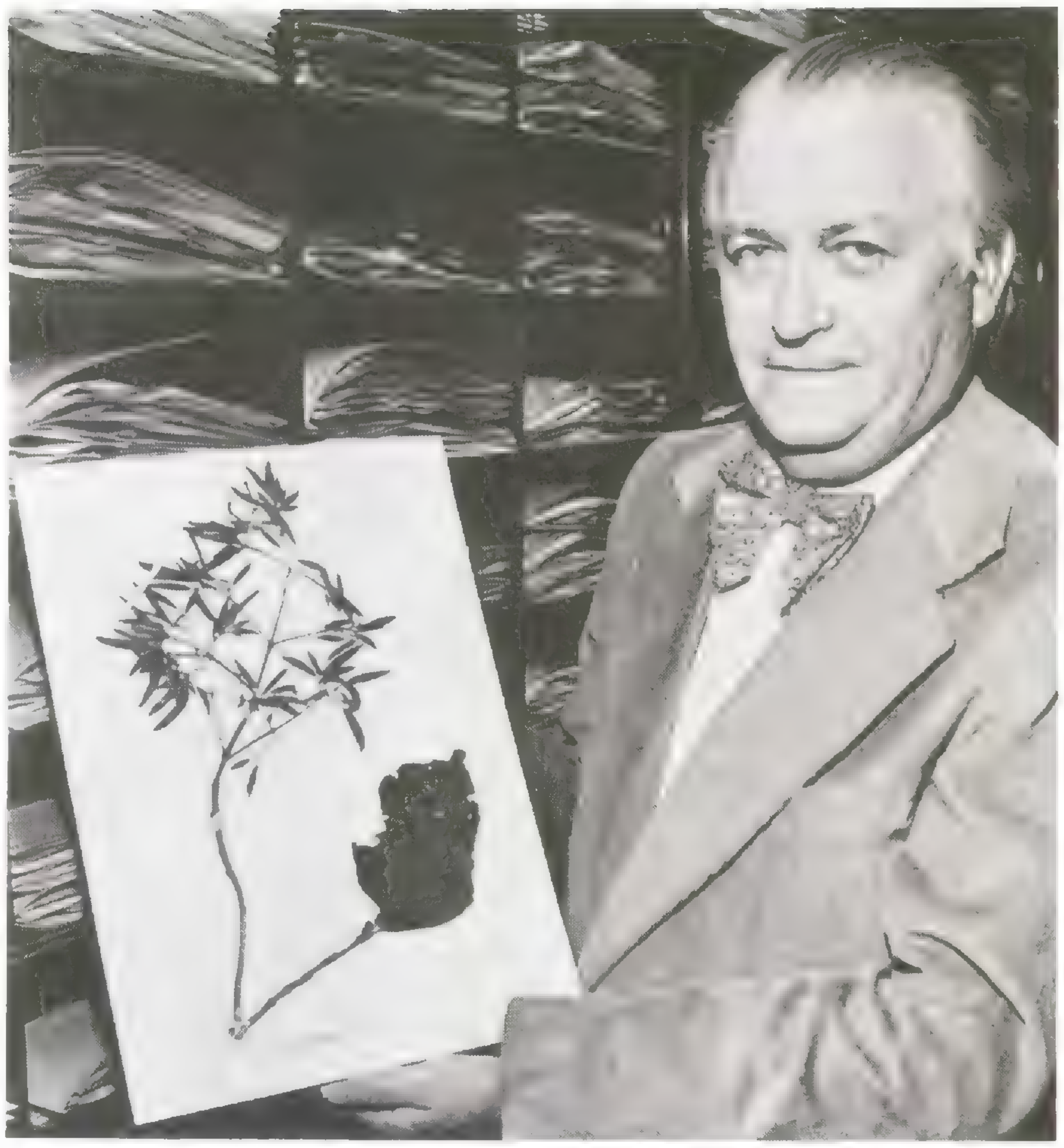
Among the first plants to be brought to Europe from its native home in the high rain-forests of the jungles adjacent to the equator was the quinine tree. Its bark yielded the first significant therapeutic agent for malaria, a disease which historically has been the scourge of civilization. Linnaeus was to name the tree *Cinchona* almost a century and a half later, in honor of the Countess of Chincon; this was one of the first generic names to commemorate a woman.

Never in the history of civilization did one kind of plant do so much for so many suffering people. Up to the advent of World War II quinine bark represented the only effective anti-malarial.

Quinine Tree Specimens Collected by Dr. Croat

Oddly enough there appears to be no reference in the literature that the quinine tree occurs in Panama, even though bark stripped from the trees in South America had been shipped from South America across the Isthmus of Panama, en route to the wharves of Europe, for more than three centuries. It is fitting and significant that the tree was recently collected in Panama by a staff member of the Missouri Botanical Garden, Dr. Thomas Croat, Curator of Phanerogams at the Garden and the most productive collector of plants in the long history of botanical exploration in the Republic of Panama. Dr. Croat collected specimens from a tree growing in a cloud-forest pasture at Alto Rey, Province of Chiriqui, at about an elevation of 6000 ft., an opposite pole in the country from Cortez's "Darien." Paul Allen, a plant collector of great reputation and one long associated with the Garden had collected specimens of the same species at about the same place in Panama in the 1940s, but these were hidden away and not identified as to species in the Field Museum in Chicago.

It is true that this range extension of *Cinchona pubescens,* previously known from Costa Rica and Northern South America, will not revive the quinine bark trade or make the international wire-services. It does, however, illustrate the effectiveness of the Garden's plant collecting program in Latin America and in the world.



Dr. John Dwyer shows herbarium specimen of Cinchona, *the tree whose bark yields the anti-malarial, quinine.*

In the new John H. Lehmann Building of the Garden there is an herbarium containing two and one-quarter million dried plant specimens, collected around the globe, whether it be Panama or Portugal, South Africa or Saskatchewan. It is here that living plants, collected and dried in the field, are deposited as a permanent record for the students of today and tomorrow. It is not possible to recite the number of puzzles that such collections can solve.

Herbarium Preserves Biological Treasures

It is odd that we are boasting about recording nature in an herbarium when so much of the biological world is being so wantonly destroyed all over the globe. But this is only another good reason for the herbarium — a record of the negative (as well as the positive). Hopefully, the negative is only momentary, if man can stay his hand and his bulldozer from sweeping away his own botanical treasures. The tropical rain-forest, the native home of our quinine tree, represents the richest biological treasure house in existence.

Despite the great concern about the effects of ecological destruction, the Garden continues to serve the scientific world, and ultimately everyone. The herbarium, as well as the several diversified departments of the institution, like those of other major institutions of the world, e.g., Kew, Field Museum etc., are clearing houses of vital information. As this is being read, collections made by staff members of the Garden during the past year, from far-away Madagascar, South Africa, Venezuela, Colombia, Peru, Panama, and Belize are being permanently processed for the herbarium. Plants new to science are being discovered weekly. Not all have the glamour of *Cinchona pubescens* but all are important in the balance of nature.

It is fitting to note the Garden's role in the Republic of Panama. Through its scientific journal, *The Annals of the Missouri Botanical Garden,* the ferns, gymnosperms, and most of the flowering plants of Panama have been described with scientific precision. This momentous task of inventorying the vegetation of this country at the crossroads of middle America and South America was initiated at the Garden in 1943 with funding from the National Science Foundation and is still continuing today. In about two years all of the families of flowering plants will have been treated. Thus far the *Annals* has devoted 4250 printed pages to the flora of Panama.

Henry Shaw Died of Malaria

In preparing this paper the author was struck with the fact that Henry Shaw, whose dream made possible the Missouri Botanical Garden, succumbed to an attack of malaria in 1889. One tends to forget that malaria was rampant in the Mississippi Valley in the 19th century. At the beginning of the 19th century Dr. John Sappington of Arrow Rock, Missouri pioneered in the dispensing of quinine pills to the hordes of settlers and military detachments crowding the Santa Fe Trail leading westward. Dr. Thomas B. Hall points this out in his book "Medicine on the Santa Fe Trail" (Morningside Bookshop, 1971): "During the Mexican War (1846-1848) the army marched with and on quinine" (p.88). Sappington Road on the outskirts of St. Louis and the suburb of Sappington, Missouri stand as a reminder of his contributions to mankind. As a final note, the same quinine bark with a history extending back to the 16th century, is again in the news. The price of the crude bark is skyrocketing because of the increased demand for the drug in a world that saw fit to destroy so many of the great quinine plantations of the South Pacific.

John Dwyer
Research Associate

HENRY SHAW
CACTUS SOCIETY SHOW

Floral Display House

Aug. 30 — 1 p.m. - 5 p.m.
Aug. 31 - Sept. 7 —
9 a.m. - 5 p.m.

Sulphur Workshop, (from left) Dr. William Klein, Assistant Director, Missouri Botanical Garden; Dr. Peter Gaspar, Washington University; Dr. Frank Hill, Brookhaven National Laboratory.

WORKSHOP ON SULFUR AT GARDEN

On May 30 and 31, 1975, the Garden provided a forum for a free-wheeling and critical exchange of information and ideas during the Workshop on Sulfur and Biological Systems, which was sponsored by the Electric Power Research Institute of California and Union Electric Company through a contract of $57,000 to the Garden. Co-directors of this project were Dr. William Klein, Assistant Director of the Garden, and Dr. John Severson, Assistant Dean, College of Arts and Sciences, and Associate Professor of Biology at St. Louis University. Helen Sussmann Parker was the Project Manager.

Participants included representatives from the electric power industry, fields of biological, chemical and ecological research, and agencies such as EPA. Discussion focused on critical questions such as: What kinds of biological and chemical information are needed for decisions on air quality? What are the implications of increasing acidity of precipitation in our aquatic and terrestrial ecosystems ? Where does man's increasing use of sulfur-containing fossil fuels fit in the overall perspective of the natural sulfur cycle?

The workshop participants relied upon a working document, *Sulfur in the Environment,* just completed at the Garden, for background information, so that the meeting sessions were used primarily for panel and group discussion.

The 55 participants share a concern for the natural movement and effects of sulfur compounds in biological systems and found the meeting a stimulating experience. Proceedings, which will be published in the fall, should provide a fresh synthesis and appraisal of sulfur and the non-human components of our ecosystem which will be useful to all those who need good information as they make decisions which affect our environment.

Helen Sussmann Parker
Project Manager, Ecological Services Department

Gardening in St. Louis

GARDENING IN JULY

This is the month for vacations for many people or for planning to take the next month off. Now is the time to consider the care of the house plants that you have had the past year.

These plants cannot remain indoors and remain healthy unless plans are made to have someone come in and water. A good method to take care of your plants while you are on vacation for a 2 to 3 week period is to place them in the bathtub, put in 2 bricks on end then place a board across these. Run about 2 inches of water in the bottom of the tub and then set the plants on the board. Water your plants well the day before you leave and if you are going to be away 3 or 4 weeks, cover the tub with a piece of plastic and leave some ventilation at each end; or, if your plants are too tall just leave them in the tub with a good watering. The water will evaporate around the plants keeping a high humidity and your plants will remain in good condition for up to approximately 3 weeks. If there is little or no light in the bathroom, it would be wise to leave a light on or put a light on a timer as this will give them approximately 14 hours a day of light.

Plants placed outdoors earlier should be well watered before you leave and it is advisable to have someone come in and check during dry periods to see that they receive water when needed.

Continue to be on the lookout for insects and spray when needed.

It is important to prune the plants to control the shape and size and to see that this is continued through the summer months so that your plants are in excellent condition when you start to bring them indoors in mid-September.

Watering

Regular waterings throughout the garden will be needed at regular intervals to the equivalent of approximately 2 inches of rain. Late this month is a good time to start perennials or biennials for next year's flowering.

Fresh seed is available late this month and when sown by the usual methods, plants will be well established for setting out in mid to late September becoming established before the severe winter. This is a good way of adding extra color around the front of shrubbery or areas that are bare.

Hedges, Shrubs

Formal hedges not trimmed last month should be pruned immediately now. Care should be taken to see that they are broader at the base than the top — sloping sides outward as you go down so as to get the full advantage of light and to catch rain as it comes. With the very lush growth produced on many shrubs and trees this spring, now would be a good time to go through and do some selective pruning to control the height and to open the bushes up to allow better air circulation. Do not prune too heavily or many of the blooms for next year will be removed.

Many plantings of vegetable seeds can be made this month where earlier crops have quit producing and can now be removed. Care should be taken to plant the seed somewhat deeper than you did earlier in the spring and see that this is kept moderately moist until germination occurs. Mulch the plants as soon as they come through, adding more mulch as they develop to keep the ground as cool as possible and to retain moisture for the plants.

Continue to remove weeds as they develop. Make sure that none of these are allowed to set seed to multiply the problem.

Many annuals will need the seedheads removed to have them continue to flower well. Occasional feedings of liquid fertilizer may be beneficial to keep the plants in good growth.

Pinching the side shoots of Dahlias and pinching back of hardy mums should be completed by the middle of this month.

Care of Roses

Roses that produced so well this past month should now have extra care given. See that spraying is done to control mite if any is apparent. Necessary spraying to control black spot will also be needed after heavy rains. An additional feeding of liquid fertilizer on the plants will help to stimulate the plants to produce new growth and to set a good display for early fall.

Cuttings of many plants can be taken any time the early part of this month. Cuttings should be 6 to 8 inches long and trimmed just below a node and the lower leaves removed. On cutting material such as forsythia, boxwood and others, it is advisable to use a rooting hormone on the stem. Place the cuttings in a prepared area using preferably a mixture of 3 parts of perlite to one part of peat. Water this well and insert the cuttings to the necessary depth of 1 to 2 inches,then water this in well and keep the plants moist by occasional syringing and shade with burlap or other material if placed outdoors. The plants should be well rooted in 6 to 8 weeks and be ready for putting out in nursery rows in early September or planted in spots where needed. Carefully stake the areas until the plants are well established.

Hanging baskets may be best cut back heavily at this time. Give additional feedings of liquid fertilizer to stimulate extra growth to bring them back into flower production in 4 or 5 weeks. Feedings at weekly intervals of liquid fertilizer will keep these plants in excellent condition.

Robert Dingwall
Chief Horticulturist

Choose a Place in the Sun To Grow Water Lilies

By Deni Seibert

Deni Seibert is the daughter of the late George Pring (shown at right with Dr. Peter H. Raven), former Superintendent of the Garden and well-known lily breeder and grower. Her article originally appeared in The New York Times. (Copyright 1974 by The New York Times Company. Reprinted by permission.)

Happiness is having the world's tropical water lily expert living at home with you. On making plans for water gardening all you do is ask. According to George H. Pring (my late father and Superintendent Emeritus of the Missouri Botanical Garden), "Water gardening is one of the easiest ways to garden. Once your plants are placed, you enjoy the results with almost no work." He should have known after 63 years of growing and hybridizing them.

Water gardening may be in a container on a balcony, in a dammed up stream or in a contrived garden pool of natural or formal lines. Aquatic plants demand full sunshine. The pool is best located away from overhanging trees for the falling leaves decay and dirty the water.

The balcony gardener can grow pigmy water lily, or the ubiquitous water hyacinth. Either of these put in a clay pot and placed in a large tub of water will grow well in a sunny corner.

The country landowner with a stream or pond might dam up a portion for a natural pool. If the water is too cool, tropical water lilies won't grow. But such plants as the hardy lilies, lotus, cattails, sweet flag and arrowheads would flourish. One must be cautious of weeds, stagnation, and destructive animals.

To start from scratch and build a pool, consider prefabricated shapes. The depth should be 18 to 24 inches. After excavating the site, place a six inch base of crushed stone.

Reinforced concrete poured into wooden forms, that allow a thickness of six inches for floor and sides, gives the sturdiest construction for a designed pool. Don't forget some provision for drainage to keep it clean. Although not necessary, a small pump for circulation and/or filter keeps the water sparkling for visual attractiveness.

Since new concrete exudes calcium which damages both plant and fish, it must be topped with a cover of waterproof paint. Or fill and flush the pool several times, scrubbing with a 25 percent solution of vinegar ending with fresh, unpolluted water.

Now the fun begins — what to plant? Esthetically choose the colorful floating horizontals, vertical accent aquatics, and marginal plants. (If fish are to be included, oxygenating plants will be necessary.)

When water temperatures are uncertain, the hardy types of water lilies are best. They may be planted in April to May and will go through the winter if the roots rest below the ice level. Replant every two to three years.

The tropical water lilies produce the showiest and biggest blossoms. They require 70 degrees water temperatures and are planted in June. Otherwise, they will lose their floating leaves and go dormant. Tropicals should be treated as annuals.

Plant one lily per container which is no less than 24 inches in diameter by 12 inches deep.

Soil is most important to growth. To five parts field soil, add one part rotted cow manure. With every bushel of this, put in eight ounces of slow acting fertilizer. Leafmold, peat, or perlite does not do well under water. Finally, fill the container to about two inches of the top and cover with an inch of sand or gravel to prevent everything from floating to the surface.

The large water lilies are placed nine to twelve inches below the water level. Within a day their leaves will seek the surface. The pigmy water lilies need only three to four inches and may be planted in a 10 inch clay pot.

Good water lily plants flower in a week or two and continue blooming all summer until frost. The only care they ask is a little supplemental feeding of a soluble fertilizer. This comes in tablet form and two ounces pushed down into the roots every 14 days is sufficient. Aquatics have few pests. A few fish and snails help maintain a good biological balance.

"When you select water lilies for color, choose from white to shades of pink, red, yellow, blue, and violet in many sizes for day or night blooming, says Mr. Pring. "What a thrill when I grew the first pure white and named it Mrs. George H. Pring. She was a great propagator," he added with a twinkle.

There are a number of aquatic plants that complement the floating kinds. For height, use the Egyptian paper plant, the attractive Taro foliage, elephant's ear or the dwarf cattail.

Perhaps the most exotic would be the lotus species, known particularly in the flower arrangement world for their elegant, dried seedpods. The *Nelumbos* are vigorous growers with large peltate leaves that grow out of the water. The ornate flowers rise from long stems in tones of white, pink, and the native yellow.

In the overall design, transition plants help blend the pool into its surrounding landscape. Clumps of ornamental grasses, bamboos, and dwarf willows do this very well.

'LIVING WINDOWS' — THE STONE PLANTS OF SOUTH AFRICA — TO BE FEATURED IN DISPLAY OF SUCCULENTS THROUGH JULY

Through July, the Lad Cutak Memorial Collection of succulent plants, situated in the west end of the Desert House, will feature the Garden's collection of *Lithops*, stone plants of South Africa. The display will include the Garden's collection of 19 species and 22 varieties of stone plants as well as information on the life history of these remarkable plants. Cultural information will also be available for those wishing to start their own collection.

Through August, the Cutak Memorial Collection will present new acquisitions of cacti made possible through a donation by the Henry Shaw Cactus Society. New plants on display at that time will represent 120 different species belonging to 70 genera of the cactus family. This acquisition significantly increases the diversity of the Garden's cactus collection and will be very useful in illustrating various biological principles in future exhibits in the Desert House.

Charles A. Huckins
Curator of Tropical Plants

Dr. Charles Huckins, Curator of Tropical Plants, positions Lithops in Desert House for display through this month.

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As a Garden Member, you are well aware of the many pleasures and benefits that Membership provides, so, as a suggestion, may I recommend a Gift Membership . . . "Give the Garden" to someone special. Your response will not only provide the Garden with much needed support, but the enrichment that this unique and personal gift brings cannot be duplicated.

(Please clip off)

GIFT MEMBERSHIP FORM

Please send a Garden Gift Membership to:

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Membership Fees - per year

Sponsoring	$250
Sustaining	$100
Contributing	$ 50
Family	$ 25
Individual	$ 18

Contributions are tax deductible in the manner and to the extent provided by law.

Checks should be made payable to Missouri Botanical Garden, and returned to Membership Office, 2315 Tower Grove Avenue, 63110.

SALLY SCHILLER
Executive Secretary, Members of the Garden

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Missouri Botanical Garden Bulletin

DR. RAVEN APPOINTED TO ENGELMANN PROFESSORSHIP AT WASHINGTON UNIVERSITY

Dr. Peter H. Raven, Director, has recently been named George Engelmann Professor of Botany at Washington University. The Engelmann Professorship of Botany was established in 1885 through a gift to the University from Henry Shaw as a posthumous honor to his friend and scientific advisor Dr. George Engelmann, who was instrumental in founding the Garden's scientific programs as well as serving as Professor of Botany and Natural History at Washington University.

Upon his appointment to the Engelmann Professorship, Dr. Raven became the fourth botanist to be so honored, the other three being William Trelease, whose tenure in the professorship extended from 1885-1909; George T. Moore (1909-1937); and Edgar Anderson (1937-1966). All three of Dr. Raven's predecessors in the Englemann Chair served as Directors of the Missouri Botanical Garden as well.

Stones that will become part of the Japanese Garden were placed on Thursday, July 31, under supervision of Designer Koichi Kawana.

On July 18, 1975 Governor Christopher S. Bond signed House Bill 9 which included an appropriation of $300,000 from revenue sharing funds for the Japanese Garden. With the Governor at a signing ceremony are Dr. Peter H. Raven, Director, right, and Dr. William M. Klein, Assistant Director of the Garden.

First Lecture in Series on "A World of Gardens" To Be Given Tuesday, Oct. 7, by Adeline Smith Boyd

A seven part series of lectures entitled "A World of Gardens" will be presented during October and November for Members of the Garden and their guests. The lectures will be held in the auditorium of the Lehmann Building, and each will be offered at both 10:30 a.m. and 8 p.m. on the lecture date.

The first lecture, "Chinese Gardens," will be presented on Tuesday, October 7, by Adeline Smith Boyd, Lecturer in the Department of Chinese and Japanese at Washington University. The six other lectures will be given on Wednesdays. The series schedule is:

Tuesday, Oct. 7	**"Chinese Gardens"** **Adeline Smith Boyd**

Continued on next page

Volume LXIII Number 17
September 1975

Further Study Made of Garden By Historic American Buildings Survey

Documentation of the historical buildings and major plantings of the Garden and significant buildings in Tower Grove Park has been continued this past summer by a team of landscape architects, architects and an architectural historian organized by the Historic American Buildings Survey of the National Park Service in Washington. The project is cosponsored by the Garden and Tower Grove Park.

Site drawings of the southwest corner of the Garden last year recorded the Garden as it was prior to the current construction program for the Japanese Garden. Those being done this year complete the rest of the Garden acreage as it appears today, including the new Shoenberg Fountain, south rose gardens and completed portions of the English Woodland Garden to the west of the Lehmann Building.

The Pitzman survey made of the Garden in 1973 with subsequent revisions has been used as the basis for the twenty-two site plans. Each shade, flowering and evergreen tree has been field checked for location, and size and the variety coordinated with the Garden horticultural staff. Several inconsistencies in plant variety names and identification have been resolved, thus furthering the accuracy and completeness of the Garden's taxonomical records.

Of particular value is the addition on the plans of many new, small horicultural varieties of trees planted in the last several years that were too small to be recorded or did not exist at the time of the Pitzman survey.

While woody shrubs and herbaceous materials are too numerous to name on this set of drawings, they are shown as mass plantings to further record their design impact on the landscape. As further changes are made in coming years to develop the Garden in accordance with the master plan, these drawings will be a vital addition to the very few plans of record available showing how the Garden has been laid out and developed over the past hundred years.

This Year's Research Team

The team this year is under the direction of Stuart M. Mertz, FASLA, St. Louis landscape architect, a veteran of many years of Garden activities including the reconstruction of portions of the pergola along the west side of the Italian Garden back in the early 1950s after a windstorm had demolished part of it. Assisting on the landscape team is Theodore Torpy, a graduate landscape architect from the HABS office in Washington. Foreman for the architectural team is Steven Bauer, a veteran of last year's team. An architectural graduate of the University of Kansas, Steve received his Master's in Architectural Restoration and Preservation from Columbia University this past June. He has been drawing the Linnaean House and several gazebos and buildings in Tower Grove Park, along with supervising John "Rod" Temmink of the University of Virginia and Lennard Roberts of Cornell University, both of whom are enrolled in architectural degree programs. Rod and Len have been making drawings of the Administration Building and several buildings and entrances in Tower Grove Park.

Peter Dessauer, project historian from Clemson

Lectures: FROM PAGE ONE

Wednesday, Oct. 15 "Japanese Gardens"
John E. Elsley
Curator of Hardy Plants
Missouri Botanical Garden

Wednesday, Oct. 22 "The Gardens of Islam"
Tamra Engelhorn Raven

Wednesday, Oct. 29 "Gardens of the Mediterranean"
Carlton B. Lees
Vice President
The New York Botanical Garden

Wednesday, Nov. 5 "The History of English Gardens"
John E. Elsley

Wednesday, Nov. 12 "20th Century English Gardens"
John E. Elsley

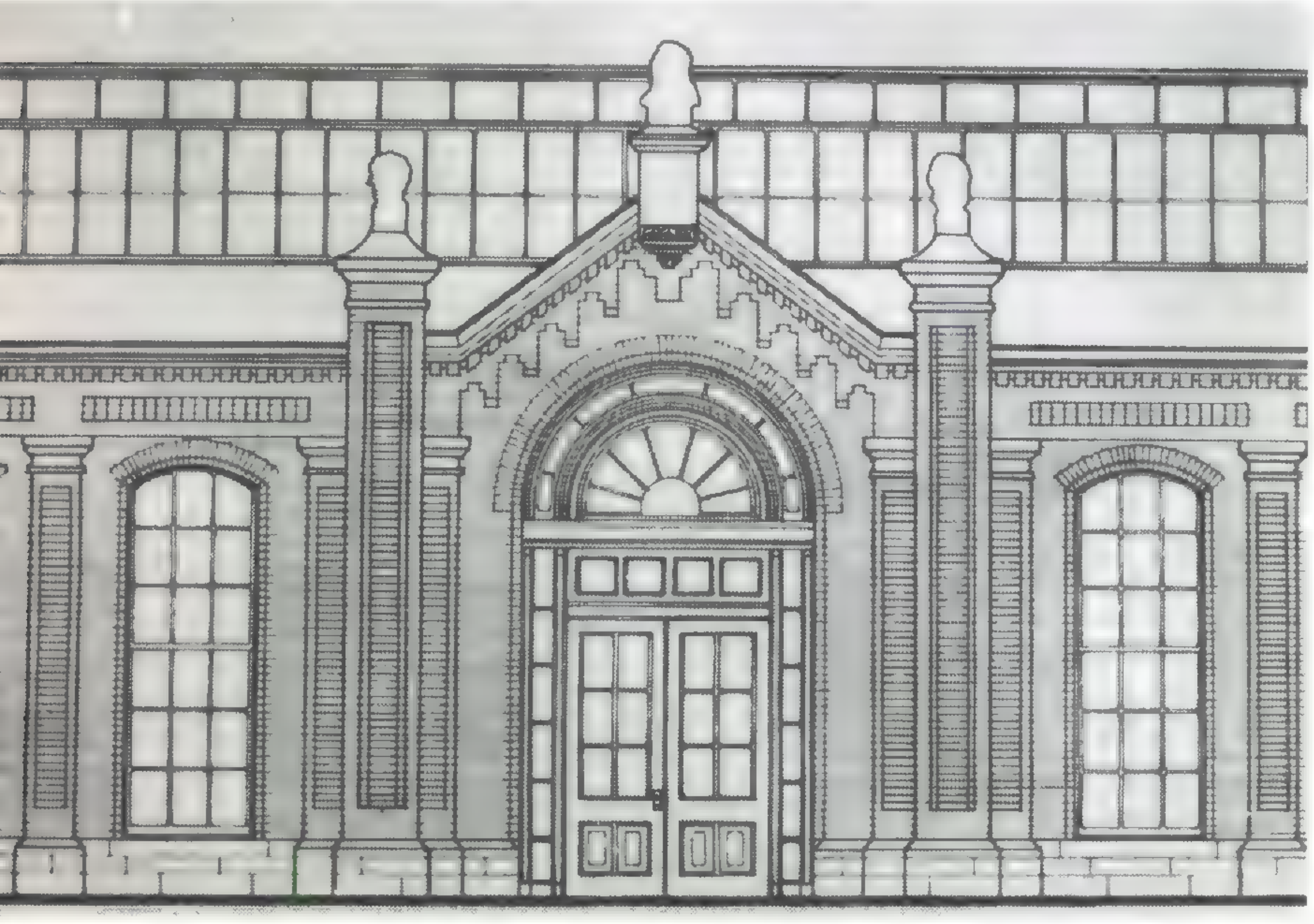
Wednesday, Nov. 19 "American Gardens"
Margaretta J. Darnall
Assistant Professor
School of Architecture
Washington University

University, has added to information uncovered by Carolyn Hamm last year and gathered many interesting facts about the designers and development of the Garden structures, as well as at Tower Grove Park.

Historic Plans and Maps Located

HABS research has located a series of historic plans and maps of the Missouri Botanical Garden which reveal the landscape concepts and physical changes from the date of inception (1858) to the present.

In the hallway of the second floor of Tower Grove House are displayed several drawings which date back to the period 1848-1897. Two landscape drafts, dated 1848 and 1858, and a plan, all probably drawn by Henry Shaw himself, show the masterful skill of the Garden's founder and his aspirations for the Garden. Francis Tunica surveyed and drew a plan of the Henry Shaw Estate in 1865 entitled "Topographical Map of Missouri Botanical Garden, Tower Grove, and Surroundings." This drawing depicts an accurate layout of Tower Grove Park several years before its construction (1868-72) and thus credits Francis Tunica, the engineer and architect of Tower Grove Park (1868-71) and his patron Henry Shaw for its design. It also shows the Garden buildings — Tower Grove House (1849), the Museum (1859), the Central Pavilion (1863), the wall, Museum and Main Gates (1859), the location of Henry Shaw's Mausoleum (built 1886) in the grove, a structure on the site of the future Linnaean House (built 1881-82) — possibly for storage, and several other unidentified structures — probably sheds and stables. A draft entitled "Lands of Henry Shaw at and around Tower Grove — 1872" (Scale: 1" = 500 ft.) designates all properties owned by Shaw surrounding the Garden, including Tower Grove Park with the "reserved strip," and specifically the addition in the Garden of a large Palm House (1868) in the north central area. A concept landscape plan of the Missouri Botanical Garden (1897) drawn by Frederick Law Olmsted, engaged as landscape architect for the Garden by Dr. Trelease after Shaw's death, shows the Conservatory Plant House (built 1914) and several other features which were never realized.



Historic American Buildings Survey Drawings of Linnaean House

Lehmann Library Archives

In the Lehmann Library archives are maps of the Missouri Botanical Garden dated 1876, 1893, and 1904, all accurate views of the Garden at those specific years. A birdseye view of the Garden from the southeast was published in *Compton's Pictorial St. Louis, 1876,* showing all existing landscape features in perspective, including the Casino at the northwest corner of Tower Grove and Magnolia Avenues, designed by Eugene L. Greenleaf in 1873. The storage building at the north end of the wall is not shown here, perhaps taken down in anticipation of building the Linnaean House. An insert map from the booklet *Missouri Botanical Garden* (Pub. 1893) clearly defines the Linnaean House (built 1881-82) and two small buildings on either side of it called "rockeries," plus Henry Shaw's townhouse, moved from 7th Street and Locust in 1891. A second booklet *Missouri Botanical Garden* (ca. 1904) shows the Cleveland Avenue gatehouse, built in 1895.

The Lehmann Library archive drawers contain dozens of concept landscape drawings by F. L. Olmsted and John Noyes. The May 1917 layout of the Missouri Botanical Garden done by John Noyes (engaged by Director George T. Moore) reveals several changes since 1904: the replacement of the Casino Lodge (demolished 1908) by the Director's Mansion (1915), the addition to the Townhouse (1908-09) to become the Administration, Museum, and Herbarium Building, the removal of the first Palm House (1915), the construction of the Conservatory with north and south wings (1914), and the formation of the "knolls" (the Central Pavilion removed) and the "Economic Garden" northwest of Tower Grove House.

When completed and edited in Washington, the drawings will be deposited in the Historical Archives of the Library of Congress and become available for study by persons throughout the world.

Stuart M. Mertz and Peter Dessauer

Gardening in St. Louis

GARDENING IN SEPTEMBER

September brings the beginning of fall and cooler weather. The pattern of gardening should now change to one of active cleanup, renovation and replanting. This is also the time to make notes of successes and failures and to jot down reminders for future years.

Rejuvenation

For the lawn, now is the time to renovate the old or start a new one. If the soil is compacted it should be aerated. Many lawns need to be rethatched. Top dress with a rich top soil, high in organic matter such as peat moss or compost. After the lawn has been thoroughly cleaned, apply the top dressing to a depth of ½ inch over the entire surface area. A well balanced fertilizer and the new lawn seed should be moist until established and there is a regular pattern of rainfall.

New lawns should have the ground well worked up and enriched with organic matter to a depth of 12 to 15 inches. The organic matter should be applied to a depth of 4 to 5 inches and worked well into the soil. Soil tests should be made and if indicated, lime should be added and raked in. The surface should be raked to a fine grade of tilth and all depressions leveled before applying the fertilizer and grass seed. The fertilizer and seed should be raked in lightly, rolled and kept moist. The object is to get the lawn well established in the cool weather.

Incidentally, in purchasing lawn seed, make sure you get seed of high quality; it's generally worth paying a little more!

Most perennials are best redivided and reset now, with the exception of late fall flowering ones, which should be left until spring. Add plenty of organic matter, such as compost, animal manure or peat moss to the soil with bonemeal and work in well. Mulch new plants well with compost, leafmold or wood chips, as this will keep soil cool and moist, allowing plants to make good growth.

Spring flowering bulbs will be on sale now, so select as early as possible and store in a cool, dry area until they can be planted. Daffodils should be planted in the ground now, while tulips can wait until October.

Start Compost Pile

This is a good time to start a compost pile, using the weeds and other debris from the garden. Later you can add the leaves. Be sure to keep the pile wet and add some old compost to the pile to introduce the bacteria needed to break the new material down.

House plants set out for the summer should be cleaned up and gradually moved indoors as the month advances. If insects are present, spray the plants and check to see if plants are root-bound. Repot as necessary and prune back to control shape and size. Cuttings of geraniums, coleus, begonias and others made now will make ideal plants for indoors.

Evergreens may be planted now. Dig the hole twice the size of the root ball and replace the soil with one containing equal parts of organic matter. Water and mulch well. Clean up weeds around other shrubs and evergreens and add fresh mulch.

Pruning

Pruning of late summer blooming shrubs should be completed this month. In pruning, cut the plant back to control the height and also to remove some of the heavier stalks at ground level, plus any weak shoots so as to allow air circulation. Also prune any broken limbs or branches damaged in recent storms.

Do not fertilize roses, shrubs and trees now, as this will not allow these plants to harden off for the winter ahead. Root feeding of these may be done once they are dormant, in early November.

Purchase ferns and house plants now so that they may become accustomed to house conditions before winter sets in.

Clean up coldframes now, removing any unwanted plants and weeds, and prepare the soil by adding organic matter. Lettuce, spinach, cabbage, broccoli, and radishes may be started now for late fall use.

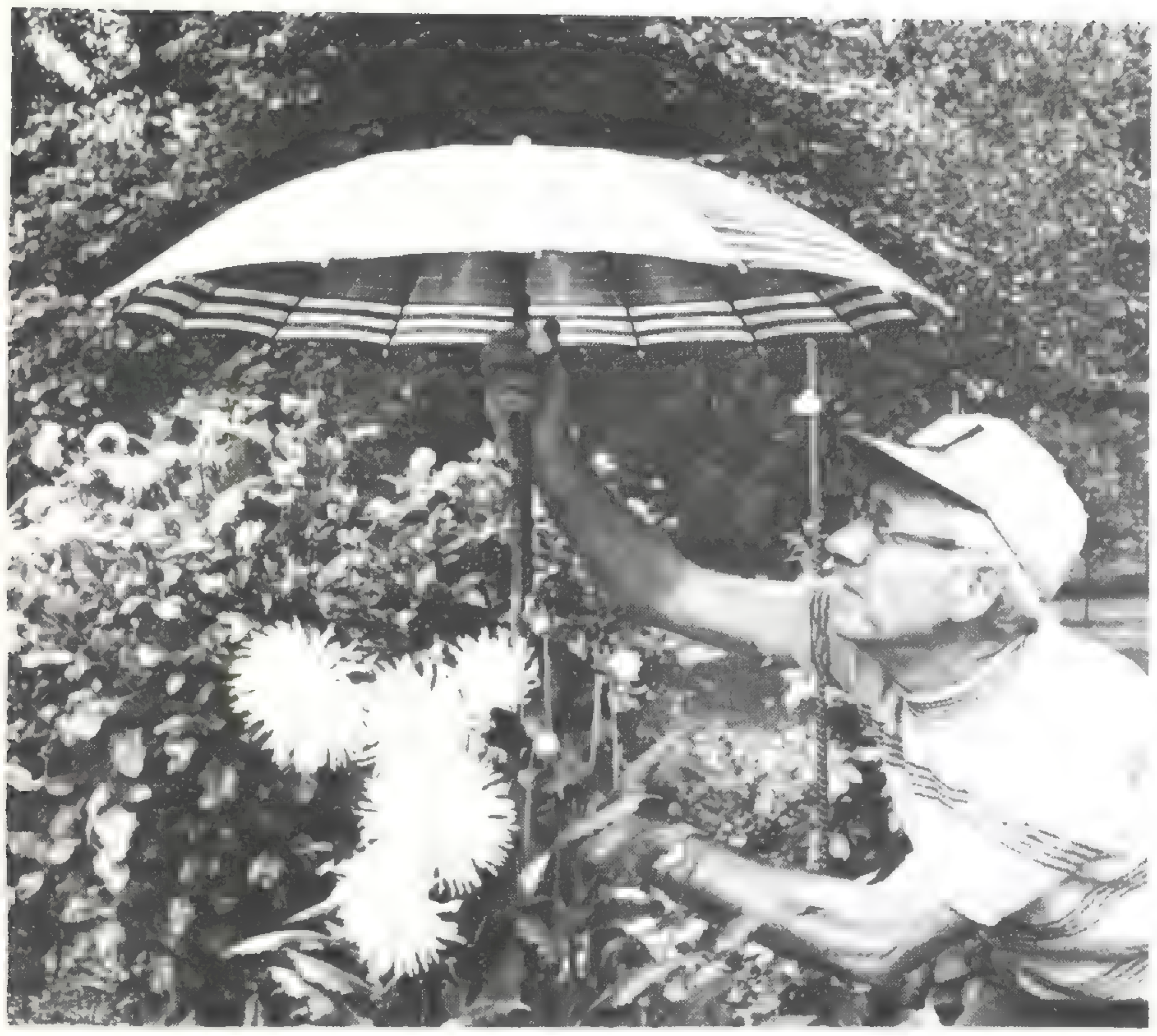
For those attempting to flower Poinsettias for Christmas, plants should be given lots of light during the day, but placed in the dark from 7 p.m. until 7 a.m.; otherwise they will fail to bloom.

Robert Dingwall
Chief Horticulturist

Greetings from the Garden Gate Shop

Christmas is coming to the Garden Gate Shop — and in a big way! Our volunteer buyers have just returned from New York and are very much excited about all the many new items they have bought for Christmas. Their special treat for the Members is a catalog featuring all the trimmings of Christmas. To be delivered in October, the catalog will serve as an invitation to the Garden Gate Shop's Christmas previews on these two days: Wednesday, November 5, and Thursday, November 6, from 10 a.m. until 9 p.m. Refreshments will be offered all day.

The Shop will have its own Christmas phone this year, and although mail orders cannot be filled, volunteers will be happy to assemble Christmas items for purchasers to pick up at the shop. Be sure to attend the previews and do all your Christmas shopping at the Garden Gate Shop.



DAHLIAS AND DEVOTION OF A VOLUNTEER

A dahlia with an umbrella?! Yes, that is exactly what you will see in the dahlia display bed in the northeast corner of the Garden, and Sandy is the man responsible for this. Hubert Sandifur has been giving his time and knowledge to the Garden for thirty-five years. Even when Sandy was working as a baker, in partnership with his brother, he still found time to give to Shaw's Garden. He has won awards and recognition for dahlias and chrysanthemums, which were displayed annually at Fall showings. He has been a recognized horticultural authority in the St. Louis area for many years, as many articles in the *Post-Dispatch* and *Globe-Democrat* will prove.

The purpose of Sandy's umbrellas over his dahlias is to prevent damage by sun and bad weather. Without this protection, the color would fade in less than two days. There are many qualities necessary to an award winning dahlia. One of the most important is the position of the bloom on the stalk. The optimum is a 45 degree angle, so that the bloom is fully visible. If it is hanging down, it is "shame-faced"; if pointing up, it is a "sun-gazer." The size must be appropriate for the variety; not too large or too small. There should be no brown edges, signifying sun scorch; no insect damage on petals or foliage, and the bloom must be fully open, not showing wilt or fading of color. All of this being necessary, we will find Sandy here every morning, for constant attention is necessary to achieve quality blooms.

You may witness the results of the hard work of Sandifur and his colleagues at the Dahlia Show, which will be held in the Floral Display House on September 27 and 28. We are fortunate to have a man of such dedication volunteering his time to the Garden. A well-earned salute goes to Hubert Sandifur.

Carol Taxman, Chairman of Volunteers

WASHINGTON UNIVERSITY WIND ENSEMBLE TO PERFORM SUNDAY, SEPTEMBER 28

The Washington University Wind Ensemble consisting of 42 instrumentalists, will present a concert on the Garden grounds Sunday, September 28, at 2:30 p.m. The performance is open to the public for the regular gate admission fee. Members will be admitted free. In event of rain the concert will be given Sunday, October 5, at the same time.

The program will include contemporary music, tunes from shows like *Camelot* and *My Fair Lady*, marches, the "Ritual Fire Dance" and other familiar selections.

The Ensemble is under the direction of Dan Presgrave, an instructor in the Department of Music at Washington University. The group is composed primarily of students from the University, other metropolitan colleges and the community at large. Instruments they play include flutes, oboes, clarinets, saxophones, trumpets, trombones, French horns, baritones, tubas and percussion.

IKEBANA BENEFIT OCTOBER 10 AND 11 FOR JAPANESE GARDEN ISLAND

The St. Louis Chapter of Ikebana International will hold a benefit on October 10 and 11 for the purpose of establishing the Tortoise Island ("Island of Eternal Youth") in the Japanese Garden. (Islands in Japanese gardens often simulate scenes in nature. An island shaped like a tortoise symbolizes longevity.)

The benefit will be held in the Studio and Garden of Mrs. Walter E. Morris, 129 Frontenac Forest, Frontenac, Mo. Hours on Friday, October 10, are from 10:30 a.m. to 5 p.m., and on Saturday, October 11, from 9 a.m. to 4 p.m.

Chairmen of the event are Mrs. John O'Brien, Active President, and Mrs. G. Joseph Nieters, Past President. The benefit is titled "Hashi Watashi," meaning a bridge between the two cultures of America and Japan.

Many unusual articles for home and garden, stressing use of natural materials and displayed amid Japanese settings, will be offered for sale. These include: flower arranging supplies, containers or vases (handmade ceramic, metal and bamboo), dried flower arrangements, pinholders to hold flowers in place, rocks to incorporate into arrangements, Japanese scrolls designed by Ikebana members in Springfield, Illinois, macrame by Belleville members, candles, Garden Owl Hangings, Japanese calendars, Sumi paintings, Bonsai plants and painted barnwood hangings.

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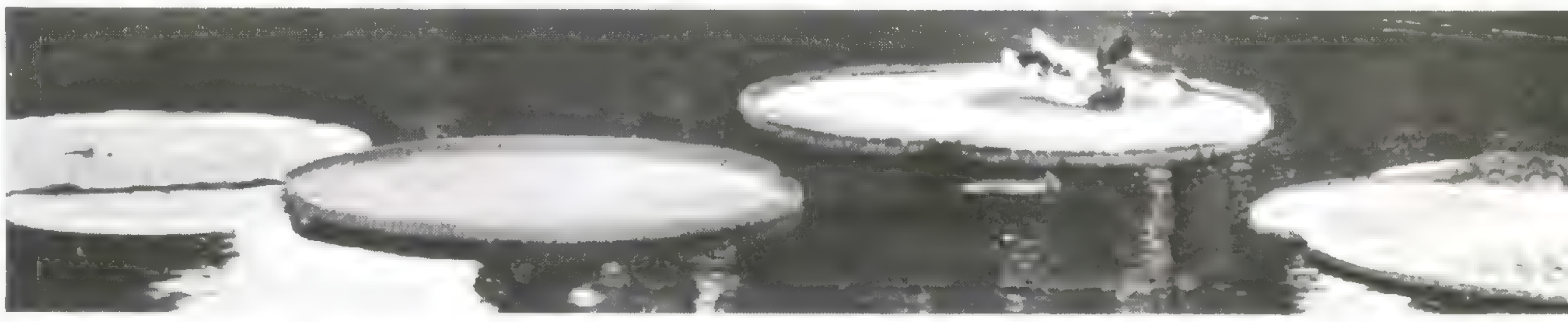
Lovely Grows the Rose: A Season To Remember

The Garden's 1975 season of roses, which continues through September, began with the heralding of June as "Rose Month." After the two-day show of the Greater St. Louis Rose Society officially opened the season, Tower Grove House displayed rose arrangements and an exhibit of antique Rose Greeting Cards. A special party, "An Evening of Roses," afforded Members and their guests a view of the beauty of the North and South Rose Gardens at twilight. "Rose Day," a public event, attracted large crowds to the luxuriant panorama that over 4600 rose bushes provided this year. Visitors will continue to enjoy the Garden's world-famous collections of roses until "the windy lights of Autumn flare" and petals fade and fall.



The Japanese Garden: A Reflection of Japanese Character

By Koichi Kawana

Professor Kawana, one of the leading Japanese landscape architects in the country, is the designer of the Japanese Garden at the Missouri Botanical Garden. He also teaches environmental design at the University of California at Los Angeles.

His article, which is being published in two parts, will conclude in the October *Bulletin.*

During the past several decades Western civilization has made a substantial impact on Japan and has affected all aspects of Japanese life both physical and spiritual. At the present time, the so-called international style seems to have supplanted the indigenous designs of the Japanese. However, in spite of these changes, when Japanese build their homes and offices in the Western style they often include a traditional Japanese garden no matter how small. This may be explained by the fact that this type of garden expresses certain inherent characteristics which are considered to be unique to the Japanese people.

In support of this thesis, four concepts or values said to be held commonly by Japanese are examined and their relationship to the Japanese garden is discussed. These concepts include: (1) the people's closeness to nature, (2) their use of a suggestive rather than a descriptive mode of communication, (3) a preference for asymmetry in design, and (4) a preference for simplicity.

Kokuminsei

Kokuminsei or the character of a people of a country is a product of myriad complexities of sociogeographical, economic and religious factors. Since it is impossible to make definite statements concerning the national character of a people without being criticized, my discourse is limited to the values mentioned and an attempt to show how they are reflected in the traditional Japanese garden.

These concepts and values have not remained static throughout the centuries but have been affected by the social, economic, and political conditions of particular periods of history. Values which are considered to be well accepted today such as *shibui* or *wabi* can be contrasted with values held at other periods. For example, compare the simplicity of a rustic teahouse with the ornateness of the magnificent Toshogu shrine at Nikko.

In spite of these cases, however, a general observation reveals that there exist characteristics and esthetic values which can be said to be uniquely Japanese. Such characteristics are the materialization of particular sets of esthetic values to which a people adhere. They can be seen not only in design such as forms, textures, and colors but, also, in inner essence and substance. They are not shackled to a particular place and epoch but rather are relatively universal and timeless.

The esthetic characteristics or values reflected in the Japanese traditional garden were not developed as a result of practical physical requirements but more as a result of the emotional relationship between the Japanese and their environment. In other words, they are not limited to the visible and physical aspects but appear to relate more closely to the psychological and spiritual. This subject can not be described adequately but must be experienced.

Closeness to Nature

Japan's natural surroundings are picturesque and beautiful and the climate is relatively mild. Japanese history contains proof that from antiquity Japanese have loved and respected nature. A feeling of closeness to nature can be said to be a basic concept of the Japanese garden.

Among the Japanese islands there are no boundless deserts, broad plains, or gigantic rocky mountains like those of the North American continent. Instead, smaller but varied natural surroundings influenced the development of a preference for the graceful and refined rather than the grand and imposing. The distinctive seasonal changes have aroused a high degree of sensitivity to the seasons and to all the minutest features that accompany the changes of the landscape from season to season.

In designing a Japanese garden it is impossible usually to copy or reproduce nature accurately due to the limitation of scale and material but the Japanese strive to recreate the essence of nature through careful observation and close association with it. The inspiration and design elements come from the actual natural phenomena which surround the designer.

Chisen

The most orthodox and popular type of garden is the *chisen* type in which a lake or pond is the main design element of the garden. Since Japan is an insular nation, the presence of water is one of the essential elements of a Japanese garden. Even in the so-called dry garden (*Karesansui*) where no water is present, water is expressed by sand or gravel and a sand pattern (*samon*) indicates various states of the sea.

Rock arrangements are the backbone of the garden and involve the rearrangement or grouping of rocks which are found on the sea shore or on hillsides. In the *tsukiyama* type of garden, which became popular during the Edo period (1615-1868), artificial hills are built to simulate mountains.

In the garden, snow is looked upon often as a flower and called *sekka* or *toka*. The way the snow falls on bare branches or garden accessories is a very important point in garden viewing. For example, the snow-viewing lantern (*yukimi-doro*) which appears to be capped by a large umbrella should be viewed when snow is piled atop the lantern and its light is flickering on the water nearby. Even such objects as protective straw caps against freezes and snow which are placed on Sago palms or tree peonies in winter become important garden accessories.

Japanese are adamant in their insistence on the expression of the seasons in all fields of art. The garden design is not one but rather four designs, one for each of the four seasons of the year. In the *kaiyushiki* or promenade style of garden the selection of plantings and design are so arranged that the focal points of the garden move from one point to another and in a different season it expresses a different mood and design. In a Japanese home, the paintings or flower arrangements are changed from season to season to reflect the actual season of the year. In traditional poems, particularly in *haiku*, a particular season is referred to either explicitly or implicitly.

The Suggestive Mode

One of the unique characteristics of the Japanese is a suggestive and implicit mode of communication. Whether in daily conversation, in decision making, or in the composition of poems, Japanese prefer suggestions to description. Meaning exists beyond what can be described.

TOWER GROVE HOUSE IS LANDMARK PILGRIMAGE SITE, OCTOBER 4-12

Tower Grove House is one of the sites that will be visited on this year's Landmark Historic Preservation Pilgrimage, October 4 through 12. The House will feature a display of Bristol china, one of its new gifts.

The House will sell tickets for the pilgrimage, which is a tour of the Historic Houses of St. Louis and surrounding areas. A single ticket will admit the bearer to all of the historic houses. The advance purchase price for one ticket is $4.50 ($5.00 after October 1).

Mrs. Edward A. Grace, Manager
Tower Grove House

Donald Keene in his book, *Landscapes and Portraits*, mentions that the 10th Century poet and critic, Fujiwara no Kinto, defined "suggestion" as one of the criteria of excellence of a poem. He said that language is magical and conveys more meanings than the words themselves express. This is more true in *haiku* in which a short five, seven, and five syllable combination express profound thoughts and meanings which otherwise would need to be conveyed by a lengthy sentence.

In the Japanese garden, monochrome greens are preferred over bright colors and the latter are used usually only as an accent. This is contrary to the design of Western gardens where colors often become the main scheme of the garden. The use of color limits the suggestive range. Red is red and yellow is yellow. But the monochromes of the Japanese garden can be likened to a black and white *sumi* painting which suggests an endless variation of colors according to one's imagination. Japanese believe that if the whole is expressed it is uninteresting.

A true appreciation of the Japanese garden requires one to look not only at the obvious forms, shapes, and materials but to look into something which exists beyond these entities. The Japanese must see things not only with his eyes, but with his mind. Thus, the viewer develops an empathy with gardens and by suggestive means and imagination is enabled to expand the garden beyond its actual limits.

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M. P. CRONIN, Editor

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GARDEN CHRISTMAS CARD FOR SALE TO MEMBERS

A Christmas card produced by the Garden will be offered for sale to Members this year. The project is being conducted jointly by the Women's Board and the Public Relations Department.

The card, above, pictures a snow scene of Tower Grove House reproduced in sepia on ancient gold parchment paper. The greeting inside, printed in brown ink, is "May Peace and Joy be yours at Christmastime and throughout the coming year." Size of the card is 6¼" x 4½".

Cards may be ordered on the form below, in packets of 10. The cost is $2.50 for each packet of 10 cards, plus 50¢ for postage and handling — regardless of the number ordered. Checks or money orders, made payable to The Missouri Botanical Garden, should be enclosed with the order form and mailed to Christmas Card 1975, Missouri Botanical Garden, 2323 Tower Grove Avenue, St. Louis, Missouri 63110.

- -

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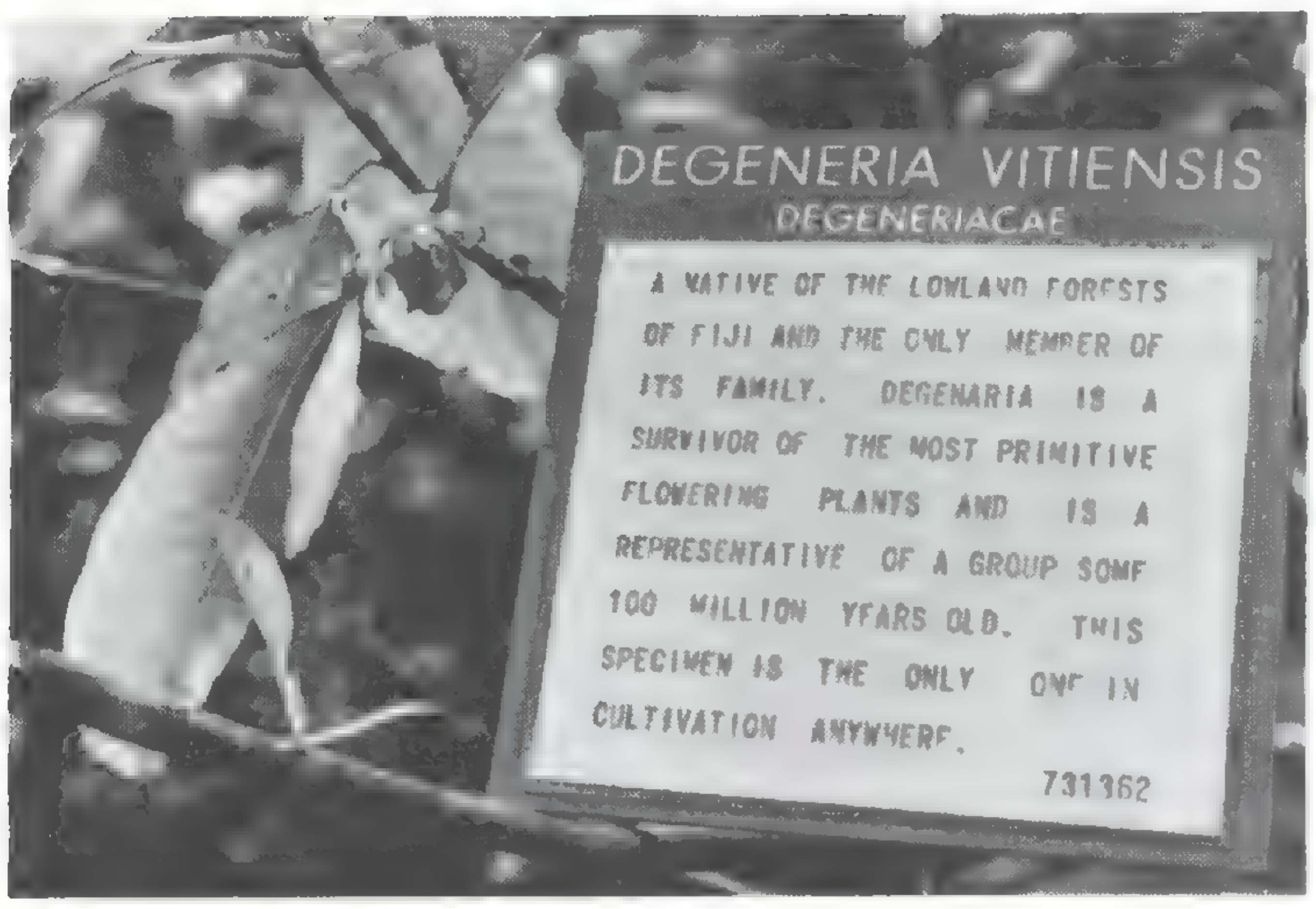
FALL FLOWER SHOW PREVIEW PARTY

October 17
5 - 7 p.m.

Floral Display House

Sponsored by Montaldo's

Missouri Botanical Garden Bulletin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"A World of Gardens" . . Lecture Series Continues

Carlton B. Lees, Vice-President of the New York Botanical Garden, will deliver a lecture on "Gardens of the Mediterranean" at 10:30 a.m. and 8:00 p.m. on October 29, 1975, in the auditorium of the Lehmann Building.

Mr. Lees' talk is one in the series of lectures, "A World of Gardens," being given this Fall for Members of the Garden and their guests. Other lecturers are: Adeline Smith Boyd: "Chinese Gardens" (Oct. 7); John E. Elsley: "Japanese Gardens" (Oct. 15), "The History of English Gardens" (Nov. 5), and "20th Century English Gardens" 'Nov. 12); Tamra Englehorn Raven: "The Gardens of Islam" (Oct. 22); and Margaretta J. Darnall: "American Gardens" (Nov. 19).

Mr. Lees is a well-known horticulturist and author, having won the 1971 Helen S. Hull Certificate of Merit for Horticultural Literature, a National Council of State Garden Clubs award, for his book *Budget Landscaping;* he is also the author of *Gardens, Plants and Man.*

FALL FLOWER SHOW OCT. 18 - NOV. 9: PREVIEW PARTY FRIDAY, OCT. 17

The Annual Fall Flower Show will be held October 18 - November 9 in the Floral Display House. On view will be Chrysanthemums of all types ranging from the huge "Football" mums to the tiniest button mums, including some 7600 flowers of every color and variety. In addition to the usual pots of flowers and ground plantings of hardy Chrysanthemums there will be a large display of cascades and hanging baskets. Members of the Garden will preview the show on Friday, October 17, from 5:30-7:30 p.m. at a party sponsored by Montaldo's.

A special feature of this year's show will be Japanese hybrid Chrysanthemums, grown from seed, products of the Garden's ever-growing exchange program with Japanese horticulturists and botanists. Many of these mums are nameless but are of unusual color and form.

Also of more than usual interest are three new varieties of large-bloomed Chrysanthemums which will be featured in the show. All are 1975 introductions, all are hardy under local growing conditions.

The Happiness or "Crane" Island in the Japanese Garden is being donated by the East Central District, Federated Garden Clubs of Missouri. Its location is described, above, by Dr. Peter H. Raven, Director, to Mrs. Thomas W. Shields, left, District Director, and Mrs John L. O'Brien, Civic Chairman, who is also President of the St. Louis Chapter of Ikebana International.

Volume LXIII Number 18
October 1975

The Japanese Garden: Reflection of Japanese Character (Part II)

By Koichi Kawana

In Part I, printed in the September Bulletin, *Professor Kawana discussed the traditionally close relationship between the Japanese and their natural surroundings. Explaining that the Japanese mode of communication is to suggest rather than to describe, he applies this to the Japanese Garden, which suggests the whole of nature through its inspired use of observation and re-creation. Remarking on the importance of the seasons to the Japanese culture as a whole, he now continues in Part II with a discussion of the Japanese use of and preference for certain design characteristics in the Japanese Garden.*

In a traditional garden one of the most important concepts is that of *miegakure*. In order to insure a sense of mystery and profundity, the design must prevent total exposure at any point. A part of an area or an object is hidden intentionally. The Japanese prefers to view gardens in the mist or rain and he listens to the sounds of water or insects without seeing their source. This approach is followed in all forms, colors, and methods of garden expression.

From olden times, the creation of a pond or lake in the shape of the Chinese character for "mind" (*shin* or *kokoro*) was popular. Such a pond was called *shinji no ike* and its popularity was due to the irregularity of its counter so that when a person stood at any one point on the shore he could see only a portion of it. Viewers could thus enjoy different vistas from divergent locations around the pond. Ponds in the shape of the character for number nine *(kyuji no ike)* or a gourd *(hyotan-ike)* were popular for the same reason.

Structures in the garden such as arbors and teahouses are hidden ordinarily behind trees or hillsides so that only a part of the building is exposed. Katsura Villa in Kyoto, which was built at the end of the 17th century, is admired by Japanese and foreigners alike as one of the finest achievements in garden architecture. Just before reaching the second gate to this garden, one notices a pine planted at the end of the bank projecting into the garden's main pond which effectively bars the view of all but a small part of that pond. It is called "Sumiyoshi Pine" and is admired for its beautiful shape, but its actual role is that of *miegakure* and to motivate viewers to proceed further to discover the entire pond.

In many instances, a tree is planted near a waterfall so that an extended branch will hide a part of the waterfall. This will lend depth and a quality of *okuyukashii* which may be translated as "modest," "noble," or "inexplicably refined." This technique is known among Japanese garden designers as *hisenzawari*. A similar technique is used with stone lanterns when a tree is planted close to a lantern so that the branches will hide a part of the compartment from which light emanates. This is referred to as *hizawari no ki*.

In selecting rocks for a garden, darker ones are preferred to those which may be colorful. It is considered that dark rocks are suggestive while colorful ones are descriptive and limit artistic expression. At the same time, dark boulders express the Japanese esthetic values of *shibusa* and age. In installing rocks it is important that at least one-third to one-half of the rock be buried in the ground. Stability and profundity of esthetic expression will be assured. Examples can be seen in many Zen temple gardens in Kyoto such as those at Daitokuji, Daisenin, and Ryoanji.

Preference for Asymmetry

A characteristic closely related to the one just discussed is the Japanese preference for asymmetry. This rejection of symmetry may result from a fear that it will limit or destroy suggestive and implicit modes of expression. The viewer's imagination must be allowed full reign to pursue its own path to perfection.

When Chinese temple architecture was brought into Japan along with Buddhism in the middle of the 6th Century, the basic layout of the temple compound was arranged symmetrically according to its Chinese prototype. Known as the *Shitennoji* style, its gates, the pagoda, and the main hall were arranged in a straight line on a central axis. However, in deference to Japanese taste, this style was supplanted soon by the *Horyuji* style in which the main hall and pagoda were placed side by side to provide a contrast between the tall and slender pagoda and the massive main hall.

In grouping specimen trees or arranging rocks the number is odd rather than even. One of the most popular stone arrangements or compositions is that called *shichi-go-san* in which rocks are arranged in groups of seven, five, and three. At Ryoanji, the most famous dry garden in Japan, fifteen stones are organized in five groups and placed among irregularly divided gravel covered spaces. Stones irregular in shape are preferred and stones of identical size and shape are seldom used in the same arrangement.

Preference for Simplicity

Simplicity and a love of the natural qualities of materials has been traditional among Japanese and this characteristic was reinforced by Zen Buddhism. Simplicity requires the elimination of all unnecessary elements and an attempt to attain a maximum desired effect with minimum means. One of the most exciting aspects of Japanese simplicity is that its every facet is controlled by a highly developed esthetic sensitivity and creativity.

This quest for simplicity caused Japanese to use materials in their natural state. Examples of this in traditional gardens include arbors constructed of natural logs and thatched roofs, fences and walls, and stone accessories expressing their inherent textures and colors. Simplicity is not the product of limited resources. To spend a large amount of money to achieve an appearance of simplicity is considered by Japanese to be a characteristic uniquely their own.

The rock arrangement which is the backbone of all styles of Japanese gardens is used in its natural color, form, and texture without any artificial treatment. The natural qualities of stone accessories such as water basins or stone lanterns are expressed as a most important part of esthetics. Highly praised is the expression of age seen in weathered and moss-covered objects.

Many garden walks and pavement are made of natural materials resulting in beautiful patterns and colors. Most architectural elements in the garden such as gates or walls are built of wood and other natural materials. One of the most interesting features which involves the unity of function and esthetics is the short fence *(sodegaki)* which is used to screen off certain spaces and objects. Natural bamboo, dried sweet clover bushes and other materials held together by black string are used in the construction of this fence. These natural materials are employed in the simplest fashion to express best their basic structure. They serve a functional purpose but are decorative as well.

In any type of garden, whether wet or dry, simplicity of design provides a peaceful and tranquil atmosphere. Predominantly monochromatic green shrubs and ground cover and a few choice specimen trees contrast favorably with the busyness of mass planting so common to Western landscapes.

Conclusion

How the design of the Japanese traditional garden incorporates concepts and values characteristically held by Japanese has been shown. The concepts described — closeness to nature, use of a suggestive mode of communication, preference for asymmetry, and a preference for simplicity — are all closely interrelated.

Naturalism as a basic design philosophy of the Japanese garden encourages asymmetrical design features such as the irregular shapes of ponds, space division, garden paths, plantings and stone arrangements.

The preference for asymmetrical design is an expression of the rejection of an achieved perfection which inevitably restricts the scope of an individual's opportunity to use his own imagination in arriving at conclusions. This fosters the concept of *miegakure* in which a suggestive rather than descriptive mode of communication is used. Important esthetic values such as profundity and mystery are supported.

These values are further enhanced by the quest for simplicity and the employment of natural rather than artificial materials. The insistence on simplicity and naturalness places a premium on the appreciation of quality in contrast to mere appearance. The most important and well accepted esthetic values of the Japanese — *wabi, sabi, yugen,* and simplicity are products of these characteristics and concepts.

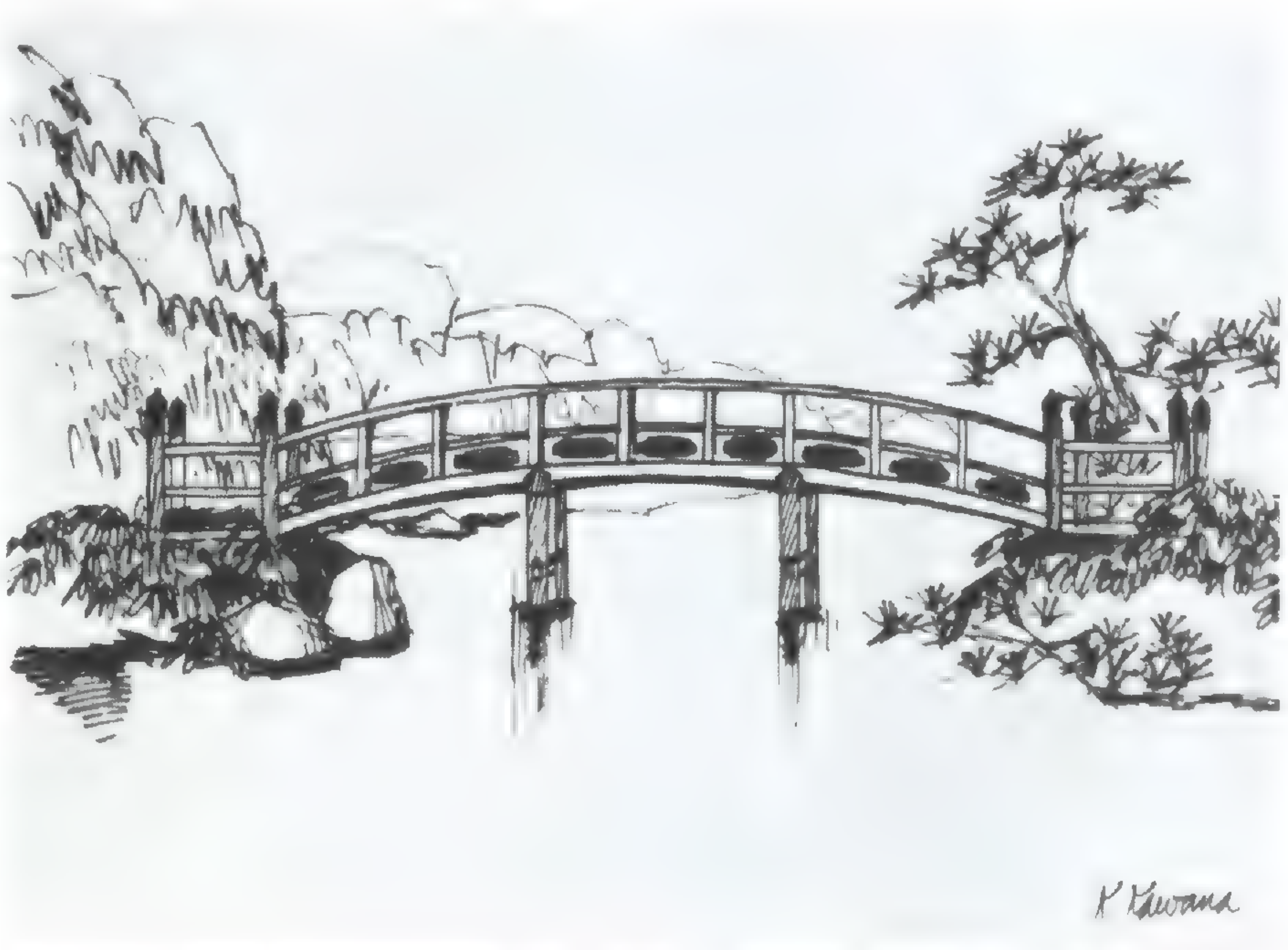
During the late Kamakura and the Muromachi periods of Japanese history, Zen monks played an important role in the development of the Japanese garden. Much of the art of rock arrangement, which is considered by Japanese garden experts to be a key point in garden design, were formulated and perfected by Zen monk-garden designers. Naturally Zen principles were incorporated in garden esthetics.

The esthetic values previously mentioned, which are accepted as the unique essence of the Japanese garden, coincide with Zen philosophy and are tenets of Zen Buddhism. The reflection of Japanese character seen in the Japanese traditional garden can be appreciated fully only through the actual participation and experience of an individual.

Final Bridge to Teahouse Island Is Donated by Mrs. Oscar H. Stroh

With the generous donation of Mrs. Oscar H. Stroh, the final bridge (picture below) to the main island in the lake of the Japanese Garden has been scheduled for completion this fall. Mrs. Stroh, a Life Member of the Garden, has donated the bridge in memory of her sister, Augusta Schopp Kurtz.

The main island, also called the Teahouse Island, will be linked to the lake shore by two bridges. The funds for the first bridge, a rail-less bridge with plank flooring, were donated by Chemtech Industries, Inc., in April of this year. The donation by Mrs. Stroh helps to ensure that the first stage of the Japanese Garden will be completed this autumn, as the bridges are vital elements of the basic plan.



OCTOBER GARDENING

For the hobby greenhouse grower, the following can be started during this month for good cut flowers later on: Asters sown approximately October 15 and grown at temperatures of 55 to 60° should be ready for cutting in April. Candytuft planted October 15 should be ready for cutting in late February when grown in a temperature of 50°. Snapdragons grown single-stem planted in mid-October will be ready for Easter if grown at 50°. Warmer temperatures will bring these plants on earlier and quality will not be quite as good.

Potted Plants

For pot plants — fibrous Begonias planted in mid-October should make nice flowering 3" pot plants in March and early April. Calceolarias, the "Poor Mans Orchid," planted the first of October make good flowering plants for late April or early May of next year. Again, these need to be grown in a temperature of around 50° at night. Cinerarias, another old time favorite, planted in mid-October and grown at cool temperatures should flower again in March. Coleus, particularly many of the new varieties — "Carefree" is one of the most colorful ones — if planted in October make nice 3 and 4" pots for late December and early January and give plenty of color for the home during the winter months.

Lawns

Lawns newly planted in early September should receive a second light application of a balanced 12-12-12 fertilizer about mid-October for best results. Also, lawns that were seeded in early September that are showing weeds can now have a herbicide applied without interfering with the grass. 2-4-D with Silvax will get many of the hard-to-kill weeds and should be applied when there is little or no wind, preferably early in the morning or late in the afternoon and at least 24 hours before there is any chance of rain coming on. Weed killer applied now would be very effective in getting many of these plants under control.

The vegetable garden should continually be cleaned up and prepared for next spring. All vegetable debris should be removed from the garden, ground up and put into the compost pile. The ground should be worked over with more organic matter added and superphosphate, at the rate of about 5 pounds to 100 square feet, should be worked in. Areas for seeding cool crops, such as peas, etc., should be thoroughly dug and mulched so that the mulch can be removed and these things can then be planted next February. Areas of the vegetable garden that are not going to be planted until later next spring would benefit by a planting of a cover crop such as perennial rye which will germinate rapidly and can be dug under as a green manure crop next spring just prior to planting. This is a good way of building up your soil and also of preventing erosion from taking place.

Planting and Pruning

This is the ideal month to get any new plantings made of evergreens and, particularly late in the month, deciduous material set out.

Avoid pruning roses heavily in the fall; little or no pruning is required as it is a known fact that they over-winter much better if they are not cut back. We prefer to leave practically all growth except long ends that might break and prune next spring in mid-April when plants begin to show new growth.

Hardy lilies should be planted this month; the best stock is available and they make ideal subjects to plant in a shurb border or other shaded areas where it is difficult to get other material to grow.

Dahlia tubers and glad corms need to be dug late this month. They should be dried for several hours in the sun, if possible, then moved into open trays in the garage to thoroughly dry off before removing all soil and storing them in the usual method for the winter months.

Insect Control

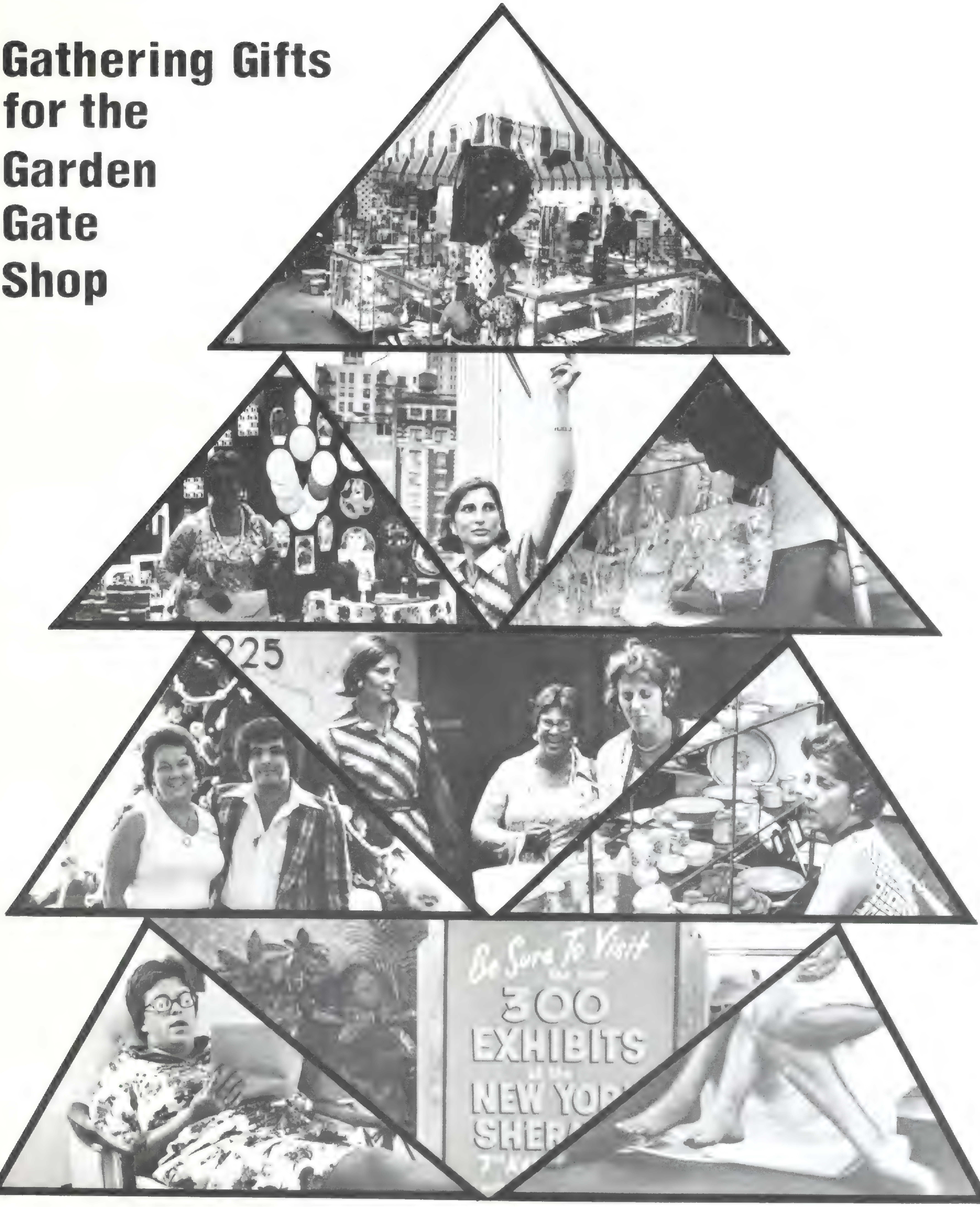
Continue to practice good insect control methods by regular spraying, particularly on roses, as this is now a period when mildew can be a serious problem unless kept under control.

Perennials should have all the tops removed and superphosphate should be worked in around the base of the plants and mulch added to control weeds after the planting of bulbs in these areas.

Make a visit to the Missouri Botanical Garden after October 18th to see the enlarged Fall Mum Show. A wide variety of mums will be displayed in the Floral Display House as well as in the Garden in front of the Linnaean House itself. This is also a good time to come in and look at the roses to see how they fared during the summer months and what ones are in good bloom this Fall to make your list for the ordering and planting of roses next spring.

Robert Dingwall
Chief Horticulturist

Gathering Gifts for the Garden Gate Shop



Mrs. Edwin S. Baldwin, Mrs. Holland F. Chalfant, Mrs. Charles W. Freeman and Mrs. William A. Sims, Jr. on a four day buying trip to the New York Gift Show in New York City. These volunteer buyers from the Garden Gate Shop purchased botanically related gift items now on sale at the Shop. The Christmas Preview will be held Wednesday, November 5, and Thursday, November 6, from 10 a.m. until 9 p.m., both days. Refreshments will be offered. Members will receive their usual 10% discount on all gift items.

Staff Focus

ARBORETUM NATURALIST

Bill Davit, one of the naturalists at the Missouri Botanical Garden Arboretum and Nature Reserve, was a practicing geophysical engineer when he began reading Thoreau and was led back to a more tangible contemplation of nature. He left his job in Washington, which had involved international study of the earth's magnetic field, and came back to Missouri. He bought some land and started gardening. He began working with Dr. David Gates's ecology research group at the Garden as a research technician. And finally, in 1970, he and his wife and three daughters became residents of the Arboretum, where they have been living and working among the pines, the wild creatures, and the natural environment ever since.

Mr. Davit's job allows him to combine his many talents with his love of nature and his interest in ecology and environment. Whether working at organic gardening, instructing classes, carving signs, making rustic benches (above), or simply helping to maintain the plantings, he is in a position to remember what Thoreau said: "In Wildness is the preservation of the World." Thinking on this a moment, he says to remind people the Arboretum is a part of the Garden and to come on out!

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M. P. CRONIN, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

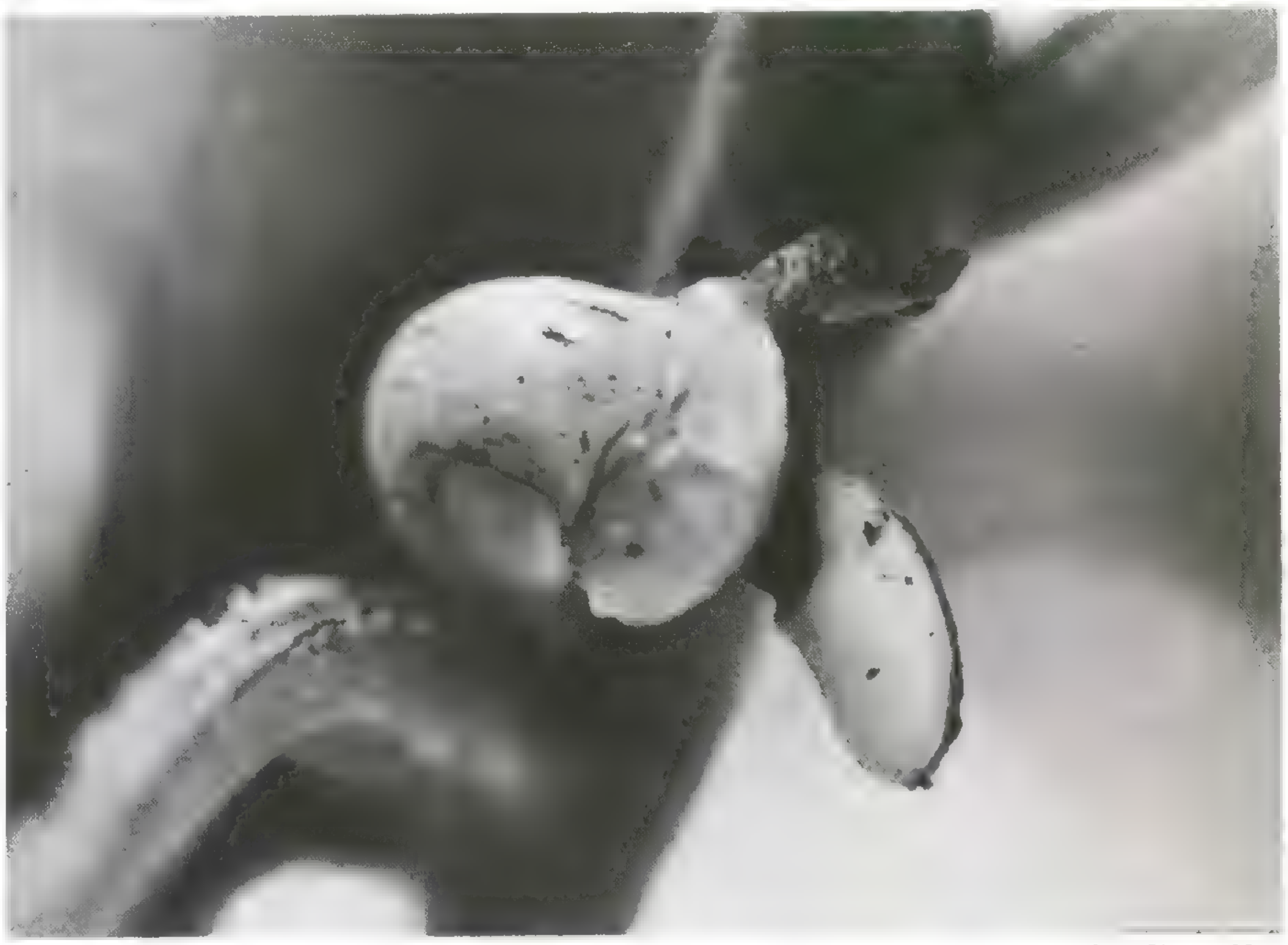
DEGENERIA FLOWERS!

On August 14, the Garden's rarest tropical plant, *Degeneria vitiensis*, flowered for the first time. After an anxious wait of almost three months (flower buds were first observed on May 21), one of a dozen buds finally flowered. This event was made all the more dramatic by the unfortunate abortion, before flowering, of all of the other flower buds during the preceding month.

The photograph of the *Degeneria* blossom (top right of page one), approximately one inch in diameter, demonstrates some characteristics which indicate the very primitive nature of this plant species: spirally arranged, leaf-like tepals which cannot be clearly distinguished as sepals or petals. Although not visible, the flattened stamens and folded carpel — both somewhat leaf-like — also point to the very primitive nature of this unusual angiosperm from the Fiji Islands. In addition to its botanical interest, this flower has a romantic appeal to amateur and professional horticulturists alike. Borne singly on a short stalk arising from a leaf-axil, the small pendulous flower bore its greenish tepals for less than a day!

The flowering of the *Degeneria* will be all the more momentous if fruit is set and viable seed is produced from this individual flower. Thus far, all attempts to vegetatively propagate *Degenerai vitiensis* have failed. As the Garden's specimen is the only one in cultivation anywhere, it would be of great importance to the botanical community if this plant were to begin reproducing successfully.

Charles A. Huckins
Curator of Tropical Plants



Enlarged close-up of the exposed seed-bearing carpel after the tepals have fallen. Black line along bottom edge is the partial opening in the carpel where pollen grains would be received and pass through the incompletely fused carpel.

Member of
The Arts and Education
Fund of Greater St. Louis

MEMBERS' DAYS SCHEDULED AT LIBRARY

Members are invited to a behind-the-scenes look at the Garden's world famous library on November 6 and November 9 from 1 to 4 p.m. both days. Exhibits of manuscripts, old books, and botanical art will be on display and the library staff will be on hand to answer questions and to acquaint Members with the resources and services available to them. Refreshments will be served.

NEW SOUTH AFRICAN ALOE AT DESERT HOUSE

Aloe marlothii, collected by Dr. and Mrs. Peter H. Raven when they were representing the Garden in South Africa in 1973, has finally reached a size that will enable it to be moved from the cactus greenhouse to the Desert House. Collected in the Eastern Transvaal of South Africa while the Ravens were in South Africa as guests of the South African Government at the official opening of the new facilities for the Botanical Research Institute in Pretoria there, this native African plant often reaches a height of 12 feet. In summer, the leaves are a light green color with reddish brown teeth; in winter, the leaves turn to a deep wine red. When flowers appear, the buds are red, lightening to a lemon yellow as they open into full bloom. As the plant grows taller, the older leaves at the base dry and eventually fall, leaving a rosette of green leaves at the very tops. The dry leaves at the top half of the stem are retained, giving a resemblance to some palm trees. A common plant in the southern part of Africa, it is found in hilly, warm parts of the country, where some local Bantu tribesmen make a kind of snuff from the leaves.

This plant is an extremely appropriate one to have in the Garden, as the Missouri Botanical Garden Herbarium is the national repository for African plants. It can now be seen in the Desert House, along with many other fine African specimens, growing evidence of the Garden's widening program of collections from Africa.

To symbolize the recent gift of 3,000 "Johnnie Walker Red" tulip bulbs to the Garden, a plaque was presented to Dr. Peter H. Raven, Director, by Sherman Barry, Missouri State Manager of Somerset Importers Ltd.

MEMBERS MEMO . . .

During the months of October and November we will be involved in a major drive for the acquisition of new Memberships. We enlist your needed support in this important campaign.

Our present Members — you — are the backbone of our Garden, but we must *increase* numbers in order to keep pace with today's economy. Your personal recommendation and endorsement of Garden Membership benefits — to a friend, relative, neighbor, business associate — will produce dynamic results.

May we count on you?

Sally Schiller
Executive Secretary
Members of the Garden

GARDEN ACCREDITED AS A MUSEUM

The American Association of Museums Commission on Accreditation has recently granted full accreditation as a museum to the Missouri Botanical Garden. With this announcement, the Garden becomes one of only 339 museums in the United States and Canada to have met the standards of operation that have been established by the nation's museum profession.

Museum accreditation signifies that the Garden has been rigorously examined by the American Association of Museums, a process that includes completion of an extremely detailed questionnaire, an on-site evaluation of the Garden's operations by a visiting committee, and a final review and decision by the AAM Accreditation Commission.

James R. Reed
Head Librarian

NEW SPONSORING MEMBERSHIPS AUGUST 1975

Mr./Mrs. Marquis D. Hilbert

NEW SUSTAINING MEMBERSHIPS AUGUST 1975

Mr./Mrs. Mark Rossow

NEW CONTRIBUTING MEMBERSHIPS AUGUST 1975

Dr. Joseph W. Eades
Mr./Mrs. Carroll A. Hochwalt
Mr./Mrs. Arthur B. Shepley, Jr.

NEW FAMILY MEMBERSHIPS AUGUST 1975

Mr./Mrs. James B. Abernathy
Mr./Mrs. Lee Bania
Mr./Mrs. Judd Belson
Dr./Mrs. H. F. Bergman
Mr./Mrs. Timothy M. Boedeker
Mr./Mrs. D. L. Bristol
Mrs. William H. Corrington
Dr./Mrs. Robert B. Deitchman
Mr. Marvin C. Duba
Mrs. Francis J. Dwyer, Jr.
Mr./Mrs. Andrew J. Eaton
Dr./Mrs. Alan H. Edelman
Mr./Mrs. William H. Engelsmann
Mr./Mrs. B. W. Fulks
Mr./Mrs. John G. German
Mr./Mrs. David Hoffmann
Mr./Mrs. John J. Hynes
Mr./Mrs. Frank A. Jacobs
Rt. Rev./Mrs. William A. Jones
Mrs. Barbara Leigh Family
Mr./Mrs. Kent Marshall
Mr./Mrs. Theodore R. P. Martin
Mr./Mrs. Richard T. McKinney
Mr./Mrs. Albert R. Miller
Dr./Mrs. Pierce W. Powers
Mr./Mrs. Robert D. Pringle
Mr./Mrs. Gary Shackelford
Mr./Mrs. H. Lannon Smith
Mr./Mrs. Dominic Soda
Mr./Mrs. Glenn Sowder, Jr.
Dr. Paul/Dr. Nancy Stein
Mr./Mrs. Ken Stout
Mr./Mrs. Herbert Thrower
Mr./Mrs. David S. Vinton
Mr. David/Mary Visintainer
Mr./Mrs. O. F. Willoughby

NEW INDIVIDUAL MEMBERSHIPS AUGUST 1975

Miss Bonnie Appleton
Mrs. Elaine L. Blodgett
Mrs. Effie Cazzell
Mr. Richard S. Cleveland
Ms. Ruth A. Conway
Mrs. Joan Dunn
Mrs. Roger E. French
Mrs. Chauncey Gegg
Miss Alice M. Gunsaulus
Mrs. John M. Hadley
Mrs. Virginia M. Hamilton
Mrs. C. L. Hein
Ms. Marilyn D. Kerwin
Mrs. Hugh L. King
Ms. Marilyn Lamb
Ms. Teresa M. Palmer
Mrs. Leon Pearlstone
Mr. William G. Priest, Jr.
Mr. Peter Rashkis
Miss Phyllis L. Rodgers
Mrs. Harriet Rosenbloom
Mrs. Harold Russell
Miss Gladys A. Sellers
Miss Margaret Ann Simmons
Ms. Claudia S. Spener
Mr. August Ulbrich
Mr. Richard H. Walsh
Ms. Karen A. Wehrman
Mr. R. E. Wrausmann

INCREASE IN MEMBERSHIP CONTRIBUTIONS AUGUST 1975

LIFE

Mrs. Mason Scudder

SUSTAINING

Mr./Mrs. W. Boardman Jones, Jr.

CONTRIBUTING

Mrs. Maryeva Naslund
Mr./Mrs. Lewis C. Nelson
Mr./Mrs. Kenneth A. Roffmann
Miss Violet Taylor

FAMILY

Mr./Mrs. R. L. Bushman
Mr. J. William Butcher
Mr./Mrs. F. L. Dinsmore
Mr. Alan Doede
Mrs. Shirley M. Edwards
Mrs. Ann R. Groesch
Mr./Mrs. E. D. Lee, Jr.
Mr./Mrs. Charles P. Pettus

AUGUST TRIBUTES

For a Speedy Recovery for Mr. J. W. Hager
Mr./Mrs. Ellis C. Littman

In Honor of Recovery of Mrs. Elmer Abramson
Mr./Mrs. Milton Kushkin

In Honor of 95th Birthday of Mrs. Stella Freund
Mrs. Ellis C. Littmann

In Memory of Mrs. Gertrude Adams
Helen M. Brinton
Alex Katz
Dale Scott
Larry Thomas

In Memory of John Agnitch
Marie Agnitch

In Memory of Mr./Mrs. Pedro Aron
Mrs. Jane Winter Pettus

In Memory of Mrs. Louis Atha
Charles F. Freeman

In Memory of Mrs. Albert E. Black
Edward and Sara Costigan

In Memory of Mrs. J. Turner Clarkson
Mr./Mrs. John Brodhead, Jr.

In Memory of Candy Crossen
The Wilson Family

In Memory of Mr. Robert M. Hamilton
Mrs. Fristoe Mullins

In Memory of Mrs. Florence McNaulty
Doug/Fern Newman

In Memory of Mr. Warren Reed
Mrs. Raymond E. Lange

In Memory of Mrs. W. Wallace Scott, Jr.
Mrs. Jane Winter Pettus

In Memory of Miss Alida Thayer
Mr./Mrs. George P. Whitelaw, Jr.

In Memory of Col. James Wear
Mr./Mrs. Joseph W. Lewis

In Memory of Mrs. Rhoda Wichman
Warren E. Gerlach
Doris C. Schulte

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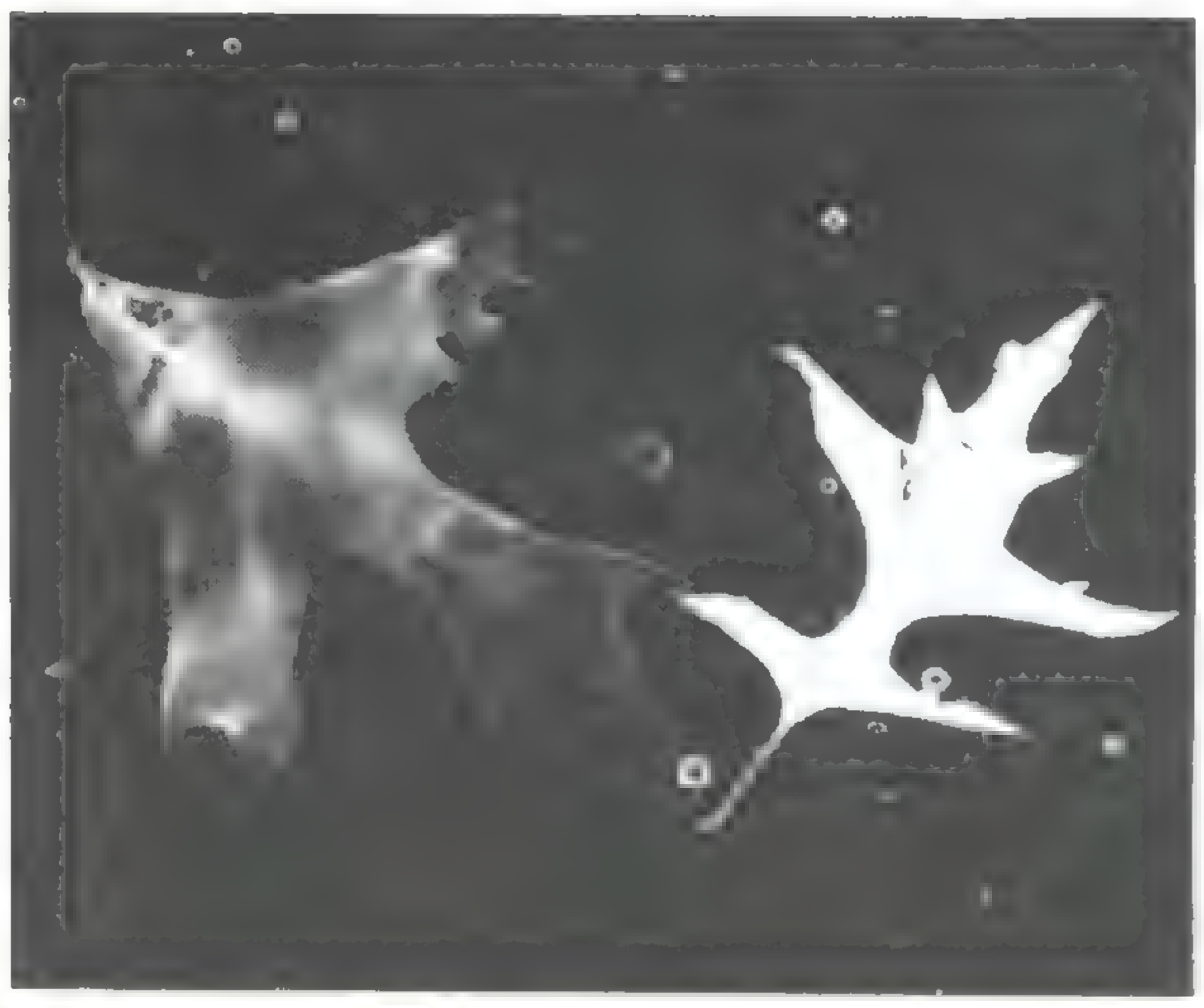
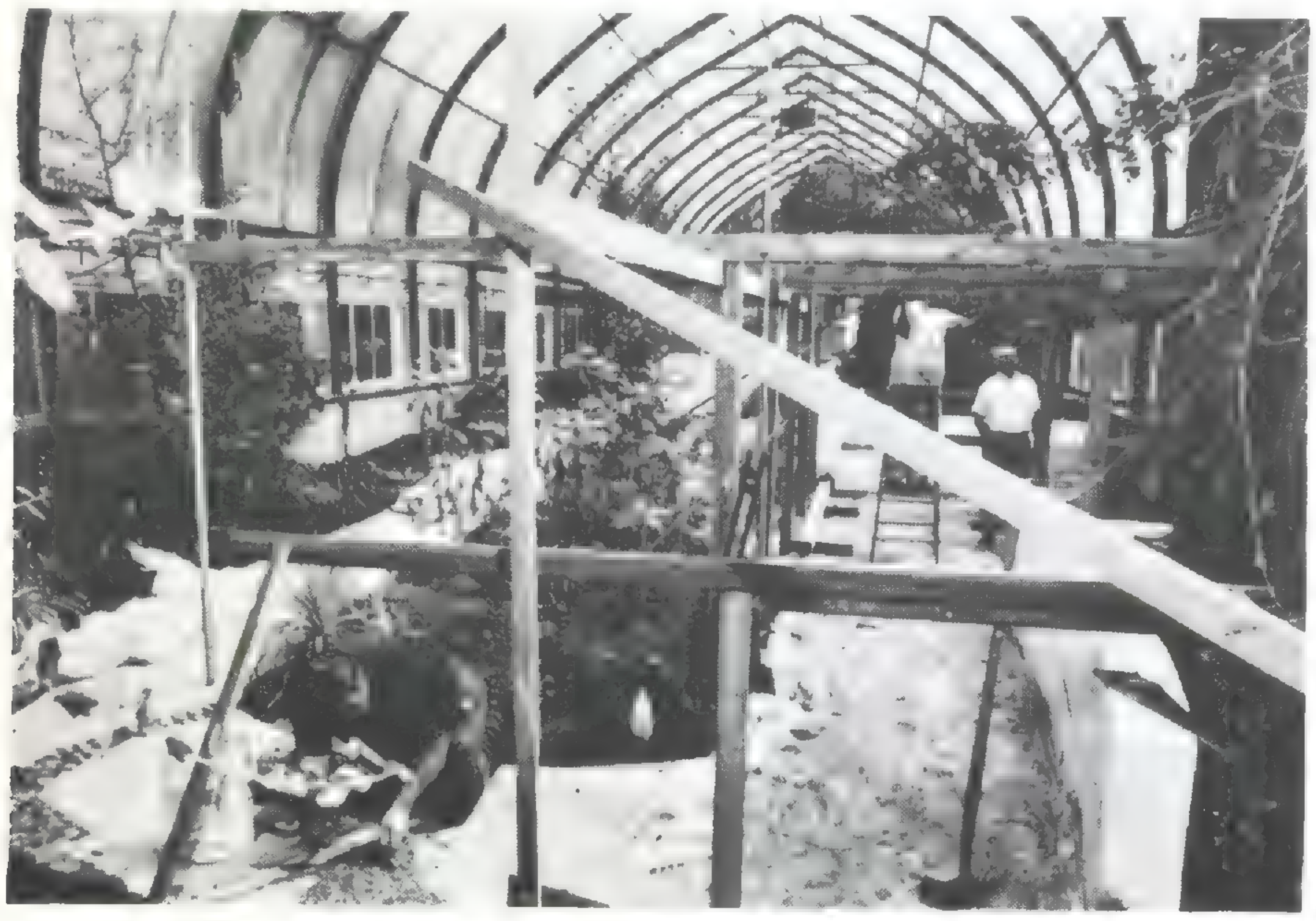


'A WORLD OF GARDENS' LECTURE SERIES TO END NOVEMBER 19 WITH TALK BY DR. M. J. DARNALL

The Fall Lecture Series, "A World of Gardens," will conclude November 19 with a talk on "American Gardens" by Dr. Margaretta J. Darnall, Assistant Professor of Architecture at Washington University. The lecture, open to Members and their guests, will be given at 10:30 a.m. and 8 p.m. in the auditorium of the Lehmann Building.

The series began October 7 and included talks by distinguished lecturers on Japanese, Chinese, Islamic, and Mediterranean gardens.

Dr. Darnall, who received her Ph.D. in Architectural History from Cornell University, has been a Lecturer at the University of California, Berkeley. During the summers of 1969 and 1970 she worked as an architect on the Cornell-Harvard architectural expedition to Sardis, Turkey.



The first Bicentennial project to be completed at the Garden will be the new Mediterranean House, a display greenhouse scheduled to be opened January 10, 1976. Above, laborers from Grafeman-Williams construct an arbor as a fellow worker carefully tuckpoints river stones in the serpentine walk beneath the support units. Besides the layered, natural walk, representative of urban Mediterranean regions, this display greenhouse will feature benches, a small fountain, and the arbor in a setting of plants native to Mediterranean climate.

Mr. Tom K. Smith, President of the Garden's Board of Trustees, presents bonus to Maintenance Head, Jim Hampton, in recognition of his service to the Garden.

JIM HAMPTON HONORED FOR 30 YEARS OF SERVICE TO GARDEN

Whenever Jim Hampton, the Garden's first Head of Maintenance, was offered a better-paying job elsewhere during the past 30 years, he found himself "just too involved, too interested in the Garden's improvement projects" to leave.

Jim was honored recently by the Board of Trustees for his devoted service during an ongoing career that began in 1945 when he joined the staff as a general laborer. He rose to Assistant Engineer in 1954 and was appointed to his present position in 1963.

His responsibilities, as head of a 15-person department of custodians, security watchmen and maintenance workers, include heating the greenhouses, superintending operations and maintenance of buildings, as well as helping to plan

Continued on next page

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November 1975

MEMBERS TRIP TO FRENCH RIVIERA

Members are invited to participate in a one week trip in late March, 1976, to the French Riviera. Headquarters will be the Loew's Monte Carlo Hotel, the largest and most complete resort complex on the Riviera.

The trip will depart via chartered jet aircraft on Sunday, March 28, and will return April 5. Of particular interest to Garden Members will be an especially designed tour of Monaco's renowned garden, Jardin Exotique. Optional side trips will be available to Nice, Cannes, St. Tropez, Cap d'Antibes, San Remo, Portofino . . . the cities that comprise the French and Italian Rivieras.

The cost of $499.00 per person is based on double occupancy and includes round trip air fare from St. Louis to Nice, hotel accommodations, transfers from the airport to the hotel and return, and other miscellaneous items.

Due to the anticipated demand for space, Members are urged to make reservations as soon as possible. A deposit of $100 per person is required to hold reservations. Checks should be made payable to Missouri Botanical Garden.

Sally Schiller
Executive Secretary, Members of the Garden

From Page One

and oversee new developments.

Some of the major improvements Jim has been a part of were the painting of the Old Palm House, the recultivation of the rose garden about 20 years ago and the changeover of the main power plant in 1966 from manual to automatic operation. Effecting this changeover, Jim says, has been his most important contribution to the Garden. "It greatly reduced annual fuel costs and freed three of my men to work elsewhere in the Garden to improve maintenance."

His dedication to the Garden and his service to others bespeak a selflessness which, combined with quiet efficiency, has earned Jim Hampton the respect and affection of his colleagues. During the past 30 years, while working sometimes 17 or 18 hours a day, often six or seven days a week, this humble, gentle man has deemed no task too low or grand for his best efforts.

Indeed, he has enjoyed most the "variety" that the range of his responsibilities has afforded — from "turning the spade" to operating the most complex modern equipment; from washing cocktail glasses at Preview Parties when Membership was small and real glassware was used, to directing behind-the-scenes work that has assured success of the Garden's horticultural shows and most sophisticated social functions.

In the endless train of humans who have helped to make Henry Shaw's garden great, Jim Hampton deserves an esteemed position.

MRS. PATRICIA CADIGAN TUCKER NAMED TO COORDINATE ACTIVITIES OF NEW DEVELOPMENT OFFICE

As part of the Garden's continuing effort to broaden its bases of support for development of horticultural, scientific, and educational programs, and meet the crisis of inflation, Mrs. Patricia Cadigan Tucker has been named to coordinate activities of the newly created Development Office.

Her appointment was announced by Dr. William M. Klein, Assistant Director of the Garden, who has assumed responsibility for the development wing of the Garden's administration. Mrs. Tucker will coordinate fund raising activities and manage programs designed to increase financial support from public and private sources on the local, state and national levels.

Her office is located in the Town House portion of the Administration Building.

Mrs. Tucker has had wide experience in higher education fund raising endeavors. Most recently she assisted in administration of programs for the Danforth Foundation headquartered in St. Louis, and prior to that assignment, served for three years with the Rockefeller Foundation in New York. At St. Louis University she worked in the Philosophy Department and with the Jesuit Provincial Office which oversees developmental programs for Jesuits in the Missouri Province.

A native of Superior, Wisconsin, Mrs. Tucker is a Vassar College graduate in political science and pursued graduate studies at both St. Louis University in Communications and at Columbia University, New York. She has written free-lance book reviews for the *St. Louis Post-Dispatch*.

For the last 20 years she has resided in Webster Groves, Mo., where she makes her home with her four children: Mary, a freshman at Yale University, John, Sara and Elizabeth Tucker.

VICTORIAN CHRISTMAS AT TOWER GROVE HOUSE DECEMBER 5 THROUGH JANUARY 6

It is 1875; Henry Shaw has house guests from England; the house is aglow in preparation for Christmas: a wreath in every window, garlands on mantels and staircase, the important Yule log, the great tree in the front parlor (decorated with velvet bows, doves, lace, and toys), the festive table set for dinner, the wassail bowl ready to welcome guests. Upstairs there is much excitement; party gowns are laid out, last minute gifts are being wrapped, stockings are hung, small trees are bedecked with quill work, crystal prisms, and sweetmeats. A spicy aroma wafts through the house from the busy kitchen, where the children steal glimpses of the gingerbread house. Outside, the sleigh is filled with gifts to be delivered, and a tree is decorated solely for the birds with suet, raisins, popcorn, and cranberries.

Mrs. Altha Brandt, Garden Gate Shop Volunteer, displays one of the many botanical prints obtained recently, some from a New York antique shop and some from a very generous Member of the Garden. The prints come from old books and are, therefore, in limited supply. Below, a few pieces from the new oriental collection now on sale at the Shop.

This Victorian Christmas will be on view from December 5 through January 6, 10 a.m. to 4 p.m. (closed Christmas Day).

The chairmen of decorations are: Parlors: Mrs. Edgar McCleery, Grass Roots Garden Club; Dining room and library: Mrs. Richard Snyder, Ladue Garden Club; Entrance and stairs: Mrs. Edward Grace, Sowing Club; Kitchen: Mrs. Glen Schreiber, St. Louis Herb Society; Office: Mrs. Edgar Denison, 25 Gardeners of Kirkwood; Upstairs: Mrs. Landon Y. Jones and Mrs. A. Timon Primm III, Garden Club of St. Louis; Bird Tree: Miss Edith Mason, Garden Club of St. Louis.

Mrs. Jean-Jacques Carnal
Historical Committee Christmas Chairman
Tower Grove House

CHRISTMAS COMES TO THE GARDEN GATE SHOP

One of the best gift shops in town, the Garden Gate Shop, adds Christmas specialty items to its usual stock of botanical and boutique items in November. Previewed by the Members November 5 and 6, the new merchandise is now on sale in the Shop.

Framed botanical prints, which had been in short supply this past year, are available again. Matted in pastel shades and framed by the St. Louis Picture Frame Company, the prints range in age from around 1814 to 1904.

The Garden Gate Shop offers a few select items, such as three wise men in stained glass at $20 apiece, but also has many unique and delightful items for the stocking-stuffer with six children and a gardener at home.

There are ceramic ornaments, including Tower Grove House, and stained glass ornaments ready to hang. Tote bags in floral prints complement embroidered, quilted bags. The new Chinese items in the Shop are attractive at mid-range prices, as are the plant stands of all sizes and shapes, the vases, lamps, planters, and garden accessories. Books on all sorts of gardening and cooking are plentiful.

The Santa motif appears on sets of glasses, carafes, and plates, with placemats to go alongside. There are matches, mobiles, mugs and trays, jewelry and animal planters with tennis shoes — something for everyone!

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M. P. CRONIN, Editor

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NOVEMBER GARDENING

This month sees gardening activities slowing down considerably as the weather gets colder. However, it is important to continue fall activities to get the garden cleaned up before severe weather sets in.

Late Planting

Late planted bulbs should be mulched; 3 or 4 inches of mulch will help to keep the ground from freezing and allow the bulbs to get a good root system well established to insure better blooms next spring. For those of you who have not planted your bulbs yet, plant as soon as possible; if planting should be delayed, mulch the ground with 5 or 6 inches of mulch to prevent frost from getting in and then plant the bulbs as soon as possible after this.

Trees and shrubs can still be put out as long as the ground isn't frozen. Prepare the soil well by digging the hole twice the size you need and incorporating plenty of peat moss and organic matter into the soil, then planting the tree or shrub to the same depth as it was. Use no commercial fertilizers in planting as this will burn the new roots. Once the plant is put in, see that it is watered well and then mulch 4 to 5 inches beyond the planting area. Newly planted shrubs should be pruned back by removing 1/3 to 1/2 the present growth. Remove any broken roots on trees and some of the top growth. You can remove approximately 1/3 of this and take out weak branches or, in some cases, head back. However, be careful that you do not injure the lead shoot as this will tend to dwarf the tree.

Preparations for Spring

Areas for the vegetable garden should be thoroughly dug over and debris cleaned off. Those of you who are starting new vegetable gardens next spring should double dig the soil and incorporate plenty of organic matter and apply superphosphate at the rate of 4 to 5 pounds per hundred square feet. Leave the ground rough as the actions of freezing and thawing will help to break the soil down. An application of lime will be beneficial if lime has not been applied for several years.

For early vegetables the ground should be raked level for seeding and a mulch of 8 to 10 inches applied over this. This mulch can be removed in early February when peas and other early vegetables are started.

Coldframes should be thoroughly cleaned up and, if plants are growing in them, should be kept free of insects and be well ventilated on warm mild days. Overwatering can cause the plants to decay at this stage. Many herbs can be moved in to the coldframe where they will continue to produce through the winter months.

Hobby Greenhouses

Hobby greenhouses are now filled to capacity and need constant attention as far as ventilation is concerned to prevent disease. Watch that you don't get direct drafts on the plants as this will cause leaves to drop. Continue watching for insect control.

With the dull, cooler days approaching, be on the lookout for mildew. Spraying with Capton or Benlate will keep this under control; it is better to alternate using two fungicides rather than just one and getting a resistance to it. The same applies in using insecticides.

Plants will not be growing very actively now, so withhold feeding; over-stimulation will cause a weak growth and in some cases can mean the loss of root systems.

Chrysanthemums should be cut back to 2 or 3 inches above the ground and may even be dug up and stored in the coldframe for winter protection. Add extra mulch to areas that didn't have mulch applied earlier.

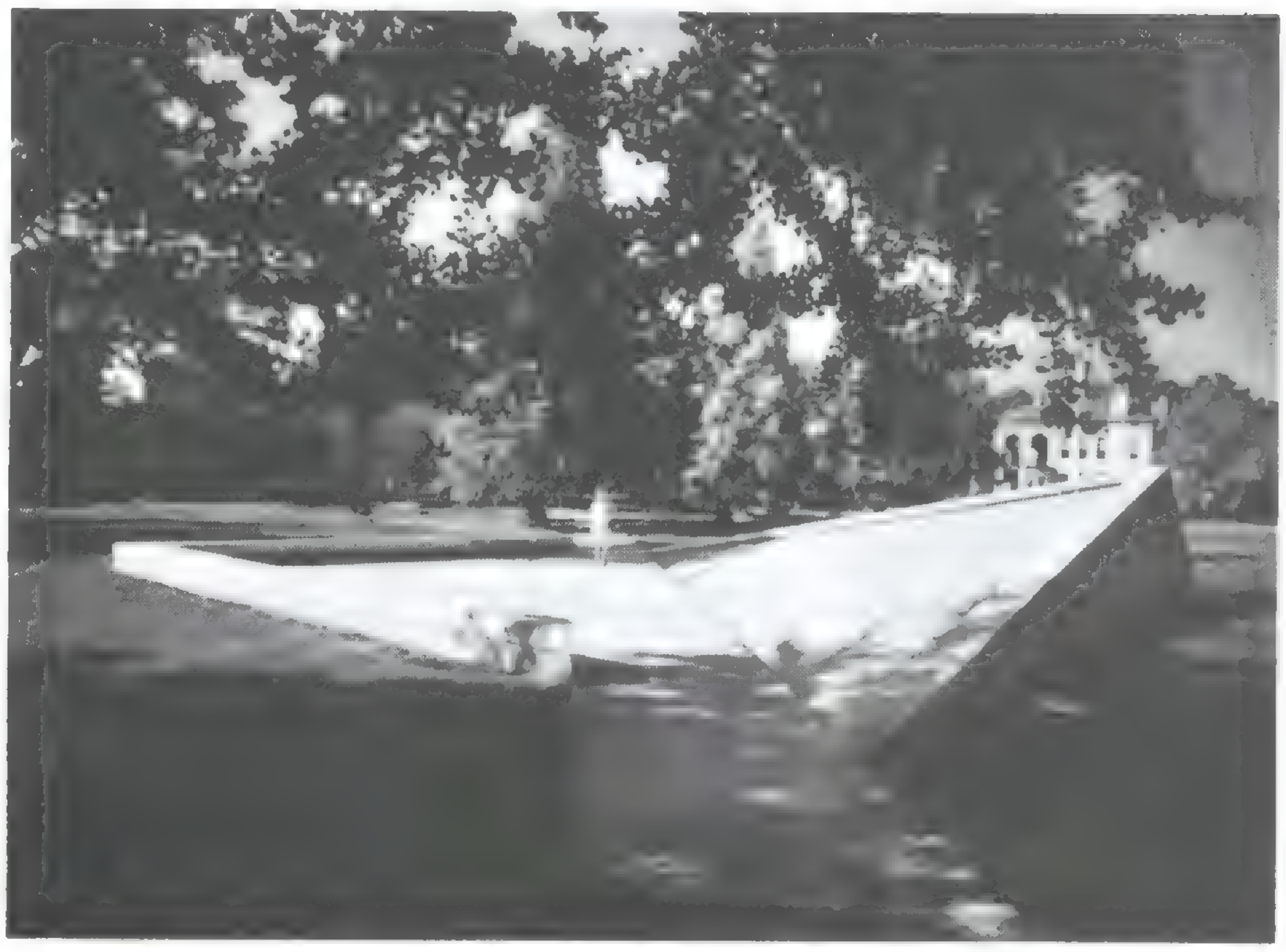
Christmas Flowers

Poinsettias should continue to have short day treatment. This means keeping them in the dark from approximately 6:00 p.m. until 8 a.m. However, see that they get good light during the day. A south window is ideal. Feed at regular intervals. Failure to flower means that they are getting too much light. The plants should be sprayed and misted occasionally with water to keep humidity up. Watch for red spider in plants grown indoors. Syringing the plants off at regular intervals will help to keep this under control.

Amaryllis bulbs may be started now; these make ideal gifts, inexpensive and yet very beautiful for presentation at Christmas.

Robert Dingwall
Chief Horticulturist

Dedication of The Shoenberg Fountain



SHOENBERG FOUNTA

A new addition to the Missouri Botanical Garden is The Shoenberg Fountain, situated between the Lehmann and Administration Buildings. Designed by Project architect Karl D. Pettit III of Eugene J. Mackey and Associates, the new fountain is part of the informal path system designed to guide visitors in the southeastern corner of the Garden.

At dedication ceremonies held September 17, Mr. Tom K. Smith, President of the Garden's Board of Trustees, delivered a short speech from the low wall of the fountain's plaza. Mr. and Mrs. Sydney M. Shoenberg, Jr. stand at his side. Then, as the water began sheeting down the fountain concourse, applause came from those present at the ceremony: Mr. and Mrs. Shoenberg, their friends and family, members of the Garden's Board of Trustees and the Women's Executive Board of the Members, Dr. and Mrs. Peter H. Raven and guests.

A reception, held in the Lehmann Building immediately after the dedication, was sponsored by the Women's Executive Board. Its President, Mrs. Dwight W. Coultas, is shown giving one of the toasts to the Shoenberg Family, whose generosity made possible the construction of the new fountain. Mr. Shoenberg is a member of The Garden's Board of Trustees.

Getting Acclimatized at the Arboretum

Mr. Steven Van Matre, Director of the Acclimatization Experiences Institute, presented a Workshop on his Acclimatization techniques the evening of October 6, 1975, at the Missouri Botanical Garden, and October 7 at the Garden's Arboretum and Nature Reserve near Gray Summit, Missouri. The Workshop, which included an evening viewing party at the Japanese Garden, and a 12 hour session at the Arboretum next day, was well attended, with 49 people enrolled and many more on the waiting list, reflecting the national prominence this view of nature study has gained in recent years.

The Arboretum, which has become a center for environmental education and *the* place to go locally to find out how to prepare and run a nature reserve, has been designated a regional center for the Acclimatization Institute. Its Superintendent, Mr. David Goudy, and one of the naturalists there, Mr. John Doty, are Associates of Van Matre's Institute.

Van Matre, (pronounced *van meter)* who is associated with George Williams College in Wisconsin, originated the name and concepts of Acclimatization and has written two books and had an article about Acclimatization in the *National Geographic.* His approach concentrates on gaining immediate sensory awareness of natural surroundings and positive experiences with nature, along with encouragement and guidance aimed at more formalized study about the environment.

Van Matre stresses that the teacher must prepare intensively for the actual outdoor sessions in order to be flexible and yet maintain control in a learning situation that is essentially fluid. A child may make a number of remarks, exclamations, and discoveries which can form the basis for a learning situation in the wild. Acclimatization technique stresses that the instructor must go beyond merely delivering a lecture in the woods to provide an in-depth involvement with nature; it is experiencing nature that teaches, not hearing about it. The teacher must participate in everything: if you can't participate, Van Matre warns in one of his books, stay home! As Robert Hentzen of Wydown Junior High School says, "It can give you a whole orientation — man as a part of nature, not as an exploiter."

The participants of the workshop were a varied group, ranging from students at local colleges to people already long active in environmental education. Among others, Mrs. Lois Cannon, the Science Consultant for the St. Charles School District, Doris Trojcak, the Director of the Department of Childhood Education at the University of Missouri, St. Louis, Mr. Robert Hentzen, the Director of the 7th Grade Outdoor Club at Wydown Junior High School, Mr. Saunders Schulz and Mr. William Severson, sculptors from Scopia, Mr. Ellis Richards, a Ranger from the very urban Gateway Arch National Park, and Mr. Ronald O. Braun, the Director of the Kirkwood Parks and Recreation Department, were in attendance. Many of the school districts, whether involved with the Arboretum as a center of environmental education or not, sent representatives to the workshop.

Because of the excellent response to this first program, David Goudy, who along with John Doty has been a main proponent of Acclimatization in the St. Louis area, feels that a second workshop might be in order for the spring of 1976 and is currently trying to schedule one with the Acclimatization Experiences Institute.

Gloria Ogoshi

Free-lance Writer

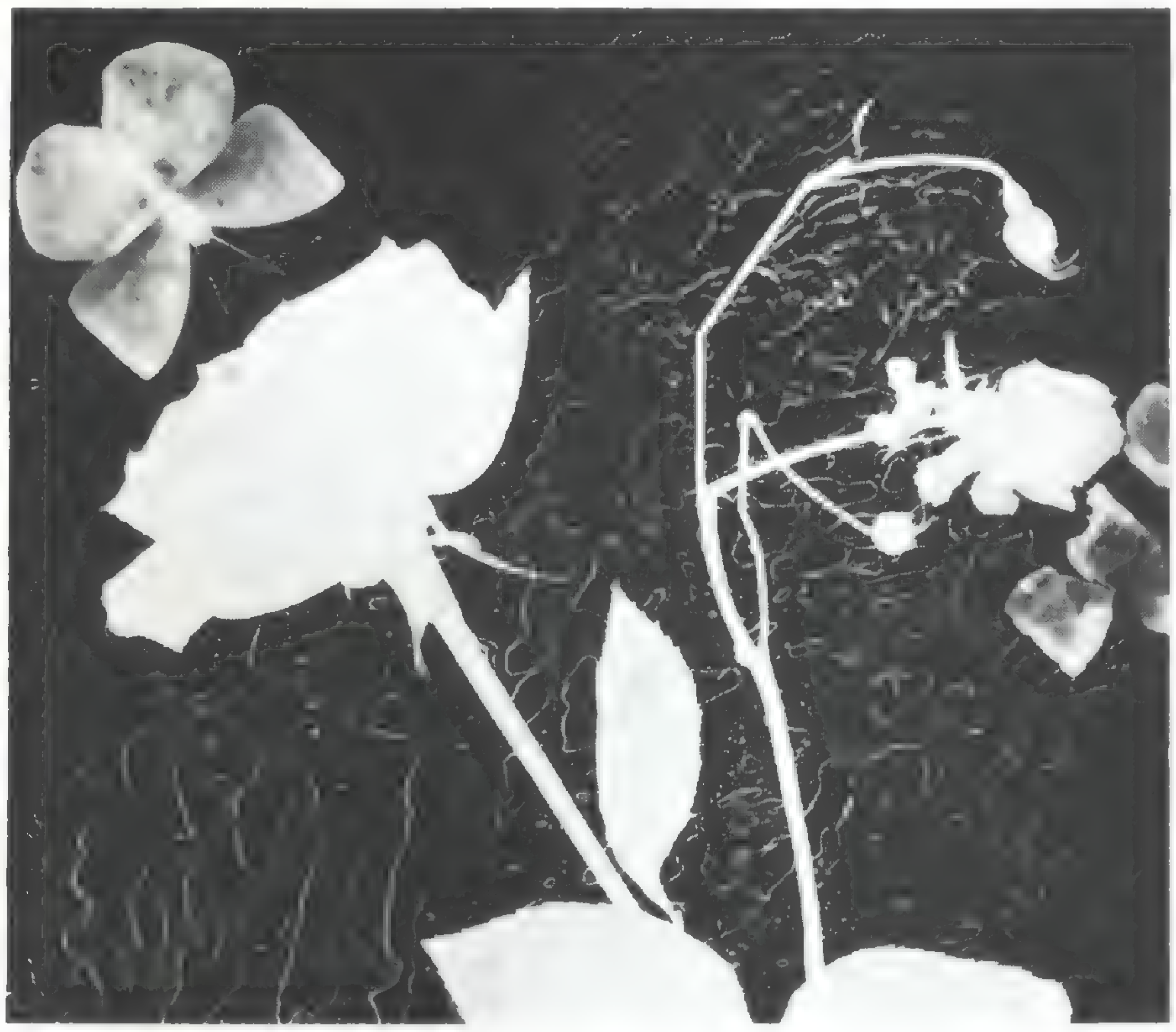
POINSETTIA PREVIEW

"Cadeaux de Noel"
(Gifts of Christmas)
Sponsored by Famous-Barr
for
Members of the Garden
Floral Display House
Friday, December 5, 1975
5:30 — 7:30 p.m.

'PHOTOGRAMS' BY THELMA BLUMBERG ON DISPLAY NOV. 17 - DEC. 19

An exhibit of photograms by Thelma Blumberg, St. Louis photographer, will be on display in the lobby of the John S. Lehmann Building from November 17 through December 19. Hours will be from 9:00 a.m. - 5:00 p.m., Monday through Friday.

Ms. Blumberg's work has been displayed in local galleries, as well as having been featured in a book of poetry and in the *St. Louis Globe-Democrat.* The technique she uses is exacting, requiring the arrangement of objects, frequently plant materials, upon light sensitive paper and exposing the arrangement to a light source. Each creation resulting from this process is a unique work of art. Many of the photograms featured in the exhibit will be for sale.



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STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (ACT OF AUGUST 12, 1970: SECTION 3685, TITLE 39, UNITED STATES CODE.)

1. Title of Publication: MISSOURI BOTANICAL GARDEN BULLETIN
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9. The purpose, function and nonprofit status of this organization and the exempt status for Federal income tax purposes has not changed during preceding 12 months Authorized to mail at reduced postage rates presently authorized by Section 3626, Title 39, United States Code
10. Extent and nature of circulation

	average no. copies each issue during preceding 12 months	actual no of copies of single issue nearest to filing date
A. Total no. copies printed ***(Net Press Run)***	7,400	7,400
B. Paid Circulation		
1. Sales through dealers and carriers, street vendors and counter sales	None	None
2. Mail subscriptions	6,772	6,772
C. Total paid circulation	6,772	6,772
D. Free distribution by mail, carrier or other means samples, complimentary, and other free copies	378	378
E. Total distribution	7,150	7,150
F. Copies not distributed		
1. Office use, left-over, unaccounted, spoiled after printing	250	250
2. Returns from news agents	None	None
G. Total ***(Sum of E & F - should equal net press run shown in A)***	7,400	7,400

I certify that the statements made by me above are correct and complete

(Signed) M. P. CRONIN, Director of Publications

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Missouri Botanical Garden Bulletin

Mediterranean House

Volume LXII Number 20
December 1975

WELCOME OCCASION: *At a dinner party held in the John S. Lehmann Building Oct. 24 to express appreciation to Missouri legislators who assisted in obtaining $300,000 from federal revenue sharing funds for the Japanese Garden, Tom K. Smith, Jr., President of the Board of Trustees, describes an Ikebana arrangement to Representative Richard J. Rabbitt of the 85th District, in which the Garden is located. The arrangement, prepared by the Ikebana Society, symbolizes the Japanese greeting "Welcome to the guests for a happy occasion."*

POINSETTIA SHOW ON DISPLAY DECEMBER 6 THROUGH JANUARY 11; MEMBERS PREVIEW PARTY ON FRIDAY, DECEMBER 5

The Garden's annual Poinsettia Show will be presented December 6 through January 11 in the Floral Display House. Hours are from 9 a.m. to 5 p.m. daily, except Christmas.

Members of the Garden will preview the show on Friday, December 5, at a party from 5:30-7:30 p.m., sponsored by Famous-Barr. During the party hours the Garden Gate Shop, with its brilliant array of holiday gifts, and The Plant Shop will be open. An abundance of attractive foliage plants plus a limited number of kalenchoe, gloxinia, rhapsodie violets, and poinsettias in bloom will be for sale in The Plant Shop. Members will receive a 10% discount on purchases at both shops.

This year's show will display an estimated 2000 poinsettia plants. Included will be festive red, white, pink, and variegated poinsettias plus newer varieties which are sturdier, more resistant to wide temperature ranges and more deeply colored.

ADELINE BOYD LECTURE SERIES TO BE PRESENTED AT THE GARDEN IN JANUARY AND FEBRUARY; MEMBERS INVITED TO ENROLL

A series of four lectures by Adeline Boyd, entitled "Roots of Japanese Art: Sources and Traditions," will be presented for members of the Garden and the Asian Art Society on four Mondays in January and February, 1976. The lectures will be given at 10:30 a.m. in the Lehmann Building auditorium on January 5 and 19 and February 2 and 16. Members of the Garden may enroll in the series for a $15.00 fee which includes the Syllabus. A reservation form is printed below.

Mrs. Boyd's lectures, enriched with slide projections, will present variations on the theme: What makes Japanese art Japanese; what qualities of mind and insight it reflects; how it has assimilated and transformed the many waves of culture coming to its shores from elsewhere. Titles of the lectures are: "Beginnings of Japanese Art" (Jan. 5); "The Yamoto-e Tradition" (Jan. 19); "The Narrative Tradition" (Feb. 2); and "The Response of the Japanese to Their Environment" (Feb. 16).

Mrs. Boyd is a Lecturer in the Department of Chinese and Japanese at Washington University. She participated in the Garden's Fall Lecture Series, "A World of Gardens," and her article, *The Yatsuhashi Bridge*, was published in the July 1975 issue of the *Bulletin*.

RESERVATION FORM
"Roots of Japanese Art: Sources and Traditions"

(Make check payable to Asian Art Society and mail with this form to: Mrs. David S. Lewis, Jr., 41 Trent Drive, St. Louis, Mo. 63124).

I wish to make ________ reservations for the series of lectures by Adeline Boyd.

My check for $__________ ($15 per person) is enclosed.

Name ______________________________

Address ____________________________

____

The MISSOURI BOTANICAL GARDEN BULLETIN is published 11 issues per year monthly except August, by the Missouri Botanical Garden, 2345 Tower Grove Avenue, St. Louis, Mo. 63110. Second class postage paid at St. Louis, Mo.

M. P. CRONIN, Editor

SUBSCRIPTION RATES:
$5.00 per year. $6.00 foreign.

Mediterranean House To Be the Garden's First Bicentennial Project

On Saturday, January 10, 1976, the Garden will begin its celebration of the country's Bicentennial by opening the Mediterranean House to the visiting public. When it opens, the Mediterranean House, located just north of the Climatron, will represent the first greenhouse in the country to be devoted exclusively to the display of mediterranean plants of the world. The idea for this Bicentennial project was first conceived by the present director, Dr. Peter H. Raven, whose scientific interest in mediterranean plants has already resulted in a greater understanding of their evolutionary development.

This project marks the successful culmination of a three year study to determine the feasibility of growing mediterranean plants to advantage under glass in the St. Louis area. In order to accomplish this study, the Garden's collection of Old World succulents, originally located in what is now the Mediterranean House, was merged in 1972 with its collection of New World succulents, located in the Desert House just south of the Climatron. As both Old and New World succulents may be grown under similar environmental conditions, their merger represented a considerable economy in space which could then be devoted to growing mediterranean plants, requiring a different set of environmental conditions. The Mediterranean House, which will be kept cool and moist through the winter, now complements both the Desert House, which is kept cool and dry, and the Climatron, which is kept warm and moist during the same period. Thus, a new dimension has been added to the Garden's ability to grow and display tropical and subtropical plants under glass.

Five Mediterranean Regions

All of the plants which will be displayed in the house are native to one or another of five different regions of the world with a mediterranean climate (i.e., characterized by cool, moist winters and hot, dry summers): 1) southern and central California, 2) central Chile, 3) southwestern and South Australia, 4) the Cape Province of South Africa, and 5) the Mediterranean Sea basin. Each of these regions will be distinguished by a different color on a display map and individual plant labels throughout the house in order to facilitate the location of plants from any particular region.

Plants of different mediterranean regions, although not closely related, are often similar in general appearance, having adopted similar strategies for existing within the extremes of their environments. This type of vegetation, composed of many bulbous plants and annuals dominated by evergreen trees and shrubs with hard, leathery leaves, is so unique that it has been given a distinctive local name in each of the five regions in which it occurs (e.g., the chaparral in California and the maquis in the Mediterranean Sea basin). About 25,000 species of flowering plants occur in these five regions of the world, and over half are found nowhere else. Many, including some growing in the Mediterranean House, are extremely restricted in their distribution and currently in danger of extinction in the wild owing to the activities of man.

250 Species On Display

At opening time, the Mediterranean House will contain about 250 different species of plants from all five mediterranean regions of the world. Some of the more interesting ornamental subjects which will be on display include many proteids (South African, Chilean, and Australian plants exhibiting a wide array of marvelous flower types), almost 50 different species of tender bulbs, a number of Australian eucalypts, and some spectacular leguminous trees, one of which, *Acacia podalyriaefolia,* will be a profuse mass of luminous yellow flowers in mid-winter. The influence of mediterranean plants on man's history, religion, philosophy, and art will be underscored by the presence of the olive, grape, fig, pomegranate, cork oak, laurel, myrtle, crown of thorns, carob, caper, poison hemlock, and bear's breech. The theme of the mediterranean will be extended outside of the house by developing foundation plantings composed of mediterranean plants which are hardy in the St. Louis area.

While both number and diversity of plants will be increased over the years, the mediterranean collection will be treated as a dynamic one, with emphasis placed

Continued on next page

FRONT COVER

New Dimension of Diversity: *The Mediterranean House, to be opened January 10, 1976, enlarges the Garden's collection of non-hardy plants. Their diversity is illustrated in photographs of: the pomegranate, bearing a young spherical fruit; a proteid, with its cone-like cluster of florets; the daisy-like South African gazania; the Mediterranean herb, lavender, with its tongue-shaped leaves; and the cork oak already developing a roughly textured bark.*

In other photographs are Mrs. June Hutson, a volunteer who has helped maintain the plants for the past three years; Dr. Charles A. Huckins, curator of the mediterranean collection; and Dr. Peter H. Raven, Director of the Missouri Botanical Garden, who conceived the Mediterranean House project.

Gardening in St. Louis

DECEMBER GARDENING

As we come to the end of the year, garden activities have slowed down considerably and at this time we're concentrating more on growing plants indoors. This is probably one of the most difficult months for your plants due to the very short days also when heat is higher and the atmosphere is running very dry. Be on the look out for insects such as mite and mealy bug. Mites are very tiny and are very difficult to see with the normal eye but are usually noticed on the plants by a small web or pinpointing on the leaves.

House plants benefit by a good cleaning; wash the leaves with warm water and good detergent as this is very beneficial. Syringing them at regular intervals will also help. See that the pots are kept clean by thoroughly washing them and if any repotting is required, old clay pots should be thoroughly washed and soaked for a few minutes in a weak detergent to get rid of any disease that may be in the pot. Allow them to thoroughly dry before using again.

Avoid using fertilizers on your indoor plants at this time of year. Little growth is showing and therefore the plants do not need feeding. However, flowering plants are an exception to the rule and should receive regular feedings while they are in flower.

Christmas plants, on the other hand, need to be kept moderately moist and well nourished for blooms to continue on them. Avoid putting your holiday plants in drafts and see that they get good light during the day. They can be moved to the center of the table or other areas in the room at night when they are getting artificial light. Keeping the plants usually 8 to 10 degrees cooler at night is also beneficial in having the plants, while in bloom, last much longer.

Azaleas should have a good soaking every 2 or 3 days. Place the pot in a container of water and wait until all bubbles cease before taking out. Most of these are usually potted in almost pure peat moss and if they should dry out, loss of roots will very quickly develop and the plant will die.

See that the bird feeders are kept constantly supplied with food on a daily basis; also during the very cold weather water should be placed outdoors for them so that they can get adequate amounts.

This is a good month to start sending for your seed catalogs and giving thought to what you are going to grow next spring. Remember that if the vegetable garden was well prepared late in the fall, vegetable transplants can be started early in the new year for planting out in late February for the cool crops to insure a good crop early in the season before hot weather sets in.

A visit to the Garden Gate Shop will let you see what good books are on hand for that special friend who would like a new book added to their library. With the long evenings ahead, it is enjoyable to sit down with a good book for an evening's entertainment and also to get considerable information on your favorite hobby.

Robert Dingwall
Chief Horticulturist

MEDITERRANEAN HOUSE: Continued from preceding page

on continual introduction, evaluation and selection of new plants as ornamental subjects, provocative educational materials and useful research tools. Only plants of outstanding ornamental, educational or scientific value will be maintained on a permanent basis.

Design and Construction

During the last six months, the interior of the Mediterranean House, originally constructed in 1912, has undergone a number of structural changes, effected by Grafeman-Williams, contractors, in order to enhance its value as a display facility. The new design for the interior was developed by Karl D. Pettit of Eugene J. Mackey and Associates. In Karl's words, "The design for the interior of the Mediterranean House was organized as a path experience with a starting and a finishing point, as is appropriate for most display spaces or exhibits. In an effort to increase the length of the experience, the path was laid out in a serpentine manner and sweeps back and forth across the strong linear axis of the house. This characteristic has the effect of softening the house's long axis as well as creating deep planting areas for the display of plants.

"Architectural elements were introduced along the path to create specific places for people to read information, sit and view plants. The materials and forms of these places respond to the principles and spontaneity of the architectural vernacular of mediterranean villages such as found on Mykonos and Sifnos in the Aegean. White stuccoed walls bend in response to movement, drop to accommodate sitting and enclose to define a place."

Additionally, modifications have been completed at the rear (southwest) entrance which will afford visitors in wheelchairs easy access to the Mediterranean House.

Charles A. Huckins
Curator of Tropical Plants

From the Director

The year of our Nation's Bicentennial, 1976, promises to be a most exciting one for the Missouri Botanical Garden. During the year we shall be presenting three new features in the Garden as our part in the Bicentennial celebrations.

On January 10, 1976, the Mediterranean House, featuring plants not only from the Mediterranean Basin itself but from the other four areas of the world with a mediterranean climate (summer dry), will be dedicated. The House has been thoroughly reconditioned and redesigned, and in it will be presented the plants of central and southern California, the Cape Region of South Africa, southwestern Australia, central Chile, as well as those of the Mediterranean proper. It will be an attractive and educational new feature for Garden visitors.

On May 4, 1976, Professor John Heslop-Harrison, Director of the Royal Botanic Gardens, Kew, will come to St. Louis to dedicate our English Woodland Garden, developed in the woods between the Lehmann Building and the Japanese Garden. Over 600 new azaleas and dozens of new attractive flowering plants and trees have been added in this area, thanks in part to the generosity of the Ladue Garden Club. Our connection with the Royal Botanic Gardens goes back to the years of our foundation in the 1850's, and it is most fitting that the Director of this venerable institution should come to St. Louis on the anniversary of Henry Shaw's arrival in St. Louis on May 4, 1819, to dedicate this lovely new feature.

The Japanese Garden, being developed on a site of some eleven acres in the southwestern part of the Garden, will be dedicated as our third major Bicentennial feature during the course of 1976. Construction of the Japanese Garden has been aided materially by the appropriation of $300,000 by the Missouri State legislature and by matching grants of $50,000 and $25,000 from the National Endowment for the Arts in Washington, D.C., a Federal agency. The development of this garden has likewise been aided by the Missouri State Council on the Arts, the East Central District of the Federated Garden Clubs of Missouri, the Ikebana Society of Greater St. Louis, Chemtech, Inc., Mrs. Joseph H. Bascom, Mrs. Oscar Stroh, Mrs. Horton Watkins, and many other interested individuals. The Japanese-American Citizens League of Greater St. Louis has substantially aided the project from its inception, locating and retaining Professor Koichi Kawana, the landscape architect for the Japanese Garden.

In the library, progress has continued to be rapid on the recataloging project, this aided materially by a grant from the Sunnen Foundation. A considerable amount of work still needs to be done on book conservation and restoration, in order to preserve our priceless treasures, many of them of high artistic as well as scientific value, and it is hoped that sources of funds for some badly needed new equipment will be found during the coming year.

The scientific program of the Garden, devoted largely to the botanical exploration of Latin America and Africa, continues to flourish. Our efforts, like those of our sister institutions, are given considerable impetus by the speed with which the tropical lowland forests are being destroyed. In the Amazon Basin, for example, some 24 percent of the forest has already been cut and an additional 25 million acres are cleared every year, this clearing resulting mainly in the formation of infertile soils on which low quality pastures for cattle are developed. The populations of the tropical portions of the world will approximately double by the end of the century, and it is estimated in the year 2000 there will be *no* undisturbed tropical forest left anywhere in the world. Tropical forest regenerates very poorly when disturbed, and it is clear that many of the plants and animals of the tropics will become extinct without ever having been sampled. In other words, action by the Garden's scientists is in many cases preserving the only samples of a particular kind of plant that will ever be available, and such action is therefore most urgent.

To take a single concrete example, the island of New Caledonia, in the tropics north of New Zealand, is inhabited by about 3,000 species of plants, many of them found nowhere else and a number extremely primitive and critical in studies of the history of plant evolution. The forests of New Caledonia are rapidly being destroyed by a combination of strip mining for nickel and conversion of the forests into pasture for cattle, and many of the unique plants of the island will

Continued on next page

LOCAL GARDEN CLUBS RECREATE CHRISTMAS, 1875 AT TOWER GROVE HOUSE

Scenes of Christmas, a hundred years past, await this year's visitors to Tower Grove House where a traditional 1875 Christmas will be recreated. Every room of the country home will be elegantly decorated as though Henry Shaw were expecting the arrival of holiday guests at any moment.

Mrs. J. J. Carnal, Christmas Chairman of the Historical Society, reports that six area garden clubs will lend their considerable talents in order to convey the warmth and sentimentality of a Victorian holiday season.

The double parlors, decorated by the Grass Roots Club, will be done in old rose velvet and lace, two popular Victorian fabrics. Club Chairman, Mrs. Edgar McCleary, reports that the parlor tree will be unusual this year because of the many handmade ornaments adorning its boughs and the antique toys which will be placed underneath as though Shaw were also entertaining his guests' children. Advent wreaths, bayberry candles, and holiday greenery will complete the parlor's festive atmosphere.

The library and dining room will be decorated by the Ladue Garden Club, chaired by Mrs. Richard Snyder. The Cranberry glassware will serve as decorative keynote and an antique highchair will be added to the festive table setting. Princess pine roping, blue juniper, and azaleas will decorate the dining room.

Cinnamon, cloves, and nutmeg were some of the aromas undoubtedly found in a bustling 1875 kitchen. Mrs. Glen Schrieber of the St. Louis Herb Society will add these spicy fragrances along with peppermint sticks, gingerbread men, holly, and red ribbons to the kitchen area, making it a cozy and merry spot, indeed.

Mr. Shaw's study will be decorated by The 25 Gardeners of Kirkwood, chaired by Mrs. Edgar Dennison, who reports that scented fir and spore fronds will be used.

The front hall will be decorated by the Sowing Circle Garden Club. The hall area houses "The Sower," a statue donated to Shaw's Garden by students of Washington University where Henry Shaw established a botany seat.

Upstairs

The Garden Club of St. Louis will recreate the scenes of happy activity as they might have occurred throughout the second floor during the 1875 holiday season. Mrs. Landon Y. Jones and Mrs. Alex T. Primm have conducted extensive research in order to match the unrestrained decorative zeal, common to the Victorian Period.

The Garneau Room will be transformed into the Children's Room. The January Room will become the "Wrapping Room" with packages awaiting their traditional coverings of tartan plaid, wallpaper, and yarn. An arrangement of Christmas antique cards will surround animal topiaries of boxwood.

The upstairs sitting room will feature a cedar tree bedecked with handmade, quilled snowflakes; handblown and decorated eggs; and ornaments of crewel, Berlin work, and crystal prisms. A needlepoint wreath will add a final note of charm to the sitting room.

Decorations for the Southwest Guest Room will be arranged by a Member who lived in the room as a child. A ball gown will be on the bed, ready to be donned for an elegant evening. On a table nearby, will be a lovely nosegay holder (tussie mussie), bordered by artemisia. Again, Mr. Shaw's bedroom will feature the traditional Rosemary tree.

Wreaths in all the windows, porcelain filled with pomander balls, and the aroma of fresh greens will lend fragrance to all the rooms, making Tower Grove House a delight to visit during the Christmas season. The house will be open every day except Christmas, from Dec. 5 through Jan. 6, 10 a.m. to 4 p.m.

Mrs. Edward A. Grace
Manager, Tower Grove House

FROM THE DIRECTOR

Continued from preceding page

become extinct during the next five to ten years. Urgent action will be needed even to catalog some of their characteristics, including those which may indicate economic significance for these plants.

In the face of this problem, the Missouri Botanical Garden and a handful of other similar scientific institutions around the world are making efforts to collect as intensively as possible in tropical regions. The total amount of available support is limited, yet the efforts that are being made are of extreme significance since they will in many instances provide the only samples available for study by future generations.

In 1976, the Missouri Botanical Garden, entering its 117th year of service to the St. Louis community, the State, the Nation, and the international scientific community, continues to be an active and vital institution, making important scientific contributions, providing education about plants for people of all ages, and developing new display features for your enjoyment.

As the eventful year 1975 draws to a close, the staff and I would like to wish you a happy holiday season and a prosperous New Year.

Peter H. Raven

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